SLV-KS1
RMT-V301

SERVICE MANUAL

US Model
Canadian Model
Mexican Model

S MECHANISM

- **Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENTS VI for MECHANICAL ADJUSTMENTS. (9-921-647-11)**

SPECIFICATIONS

System

Format	VHS NTSC standard
Video recording system	Rotary head helical scanning FM system
Video heads	Double azimuth four heads
Video signal	NTSC color, EIA standards

General

Power requirements	120 V AC, 60 Hz
Power consumption	24 W (US, Canadian) 18 W (Mexican)
Operating temperature	5˚C to 40˚C (41˚F to 104˚F)
Dimensions	Approx. 355 × 96 × 285.5 mm (w/h/d) (Approx. 14 × 3 7/8 × 11 1/4 inches) including projecting parts and controls
Mass	Approx. 3.6 kg (7lb 15oz)

Supplied accessories

Remote control (1)
Size AA (R6) batteries (2)
Audio/video cable (3-phono to 3-phono) (1)

Design and specifications are subject to change without notice.

VHS VIDEO CASSETTE RECORDER

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

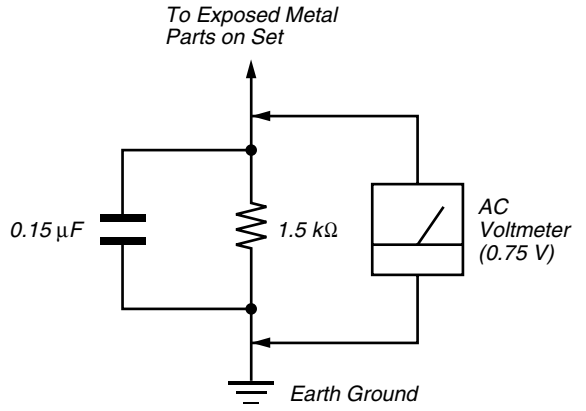

Fig. A Using AC voltmeter to check AC leakage

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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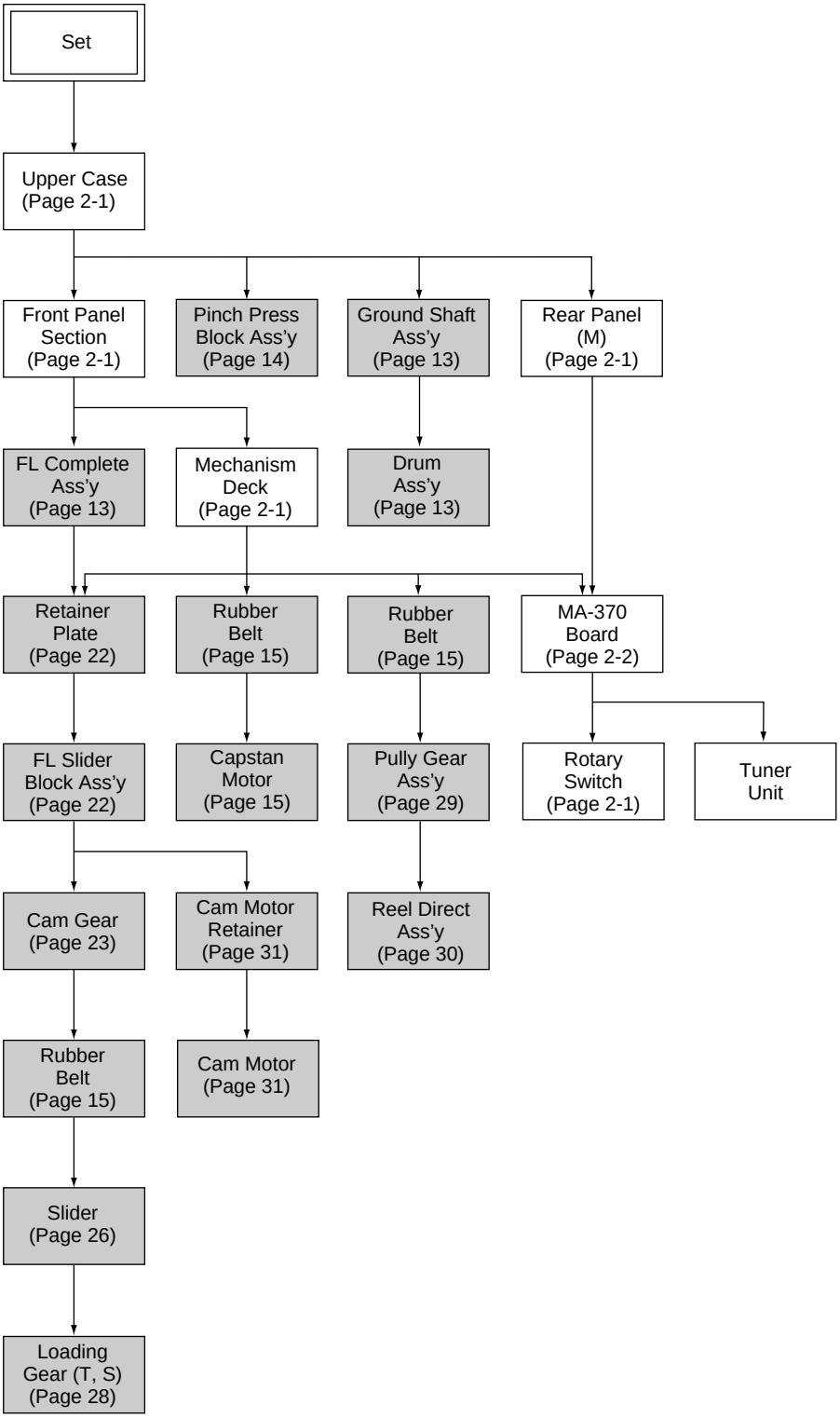
SERVICE NOTE

1. DISASSEMBLY

• This set can be disassembled in the order shown below.

Note: Pages in ▭ indicated pages in the SERVICE MANUAL.
Pages in ▭ indicated pages in the VHS MECHANICAL ADJUSTMENT MANUAL VI.


Set
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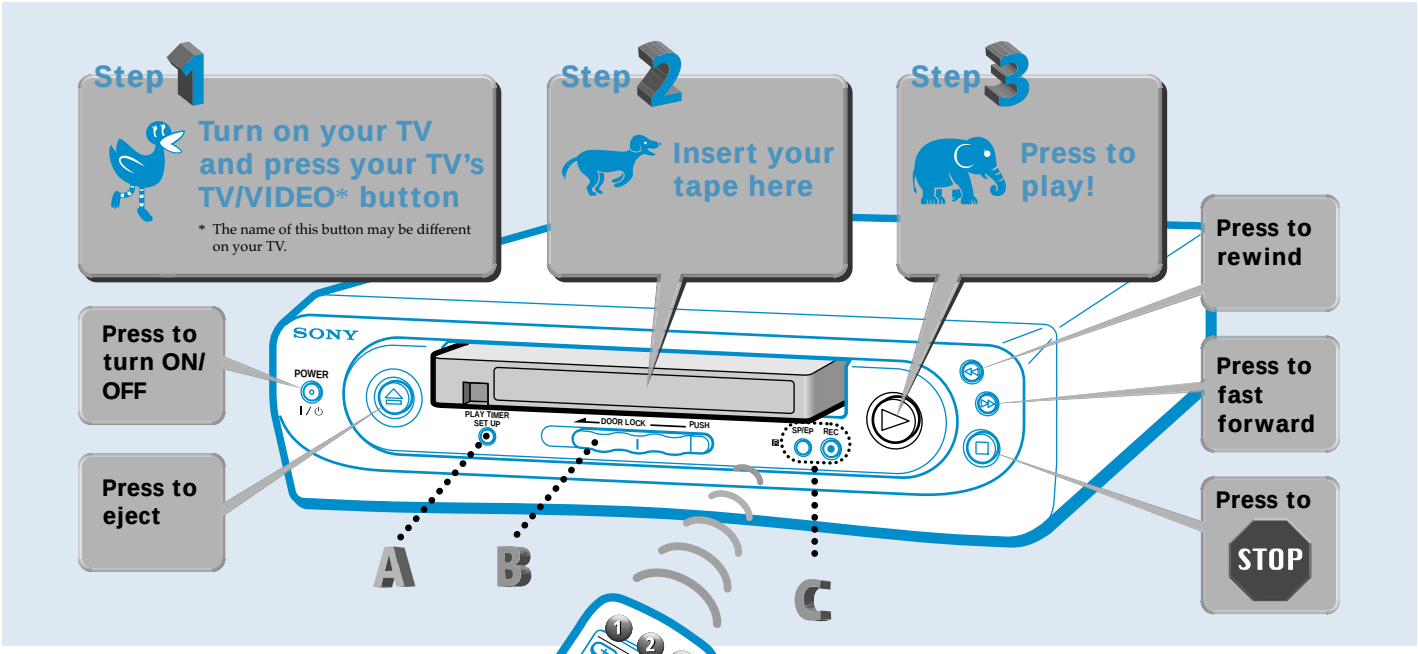
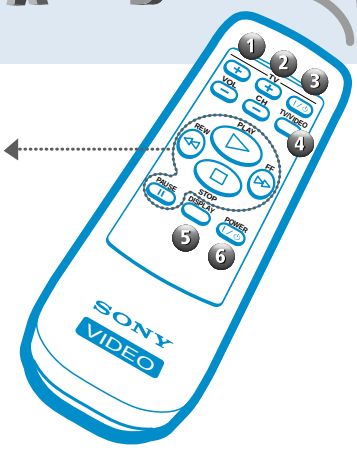
Rubber Belt (Page 15)
Cam Motor (Page 31)
Slider (Page 26)
Loading Gear (T, S) (Page 28)

SECTION 1
GENERAL

This section is extracted from instruction manual. (3-062-072-11)





► PLAY button
Press this button to play a tape.

◄◄ REW (rewind) button
Press ■ STOP and then this button to rewind a tape. To watch the picture in fast motion, press this button while the tape is playing.

►► FF (fast forward) button
Press ■ STOP and then this button to fast forward a tape. To watch the picture in fast motion, press this button while the tape is playing.

■ STOP button
Press this button to stop the tape when it is playing, rewinding, fast forwarding, or recording.

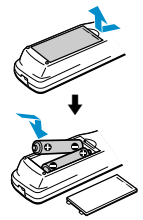
❚❚ PAUSE button
Press this button to momentarily stop the tape.

1. VOL +/– buttons: These buttons change the volume on your TV.
2. CH +/– buttons: These buttons change the channels on your TV.
3. TV I/⏻ (power) button: Use this button to turn your TV on and off.
4. TV/VIDEO button: This button switches your TV between regular TV programs and the video input.

You must first program your remote control to use the buttons 1 through 4 above (see below).

5. DISPLAY button: This button will turn on or off the animations that appear when you fast forward or rewind a tape.
6. POWER I/⏻ button: Although this button turns the VCR on and off, the VCR will turn on automatically when you insert a tape or press the ► PLAY, ►► FF, ◄◄ REW, ● REC, or PLAY TIMER SET UP buttons. The VCR will turn off automatically if no buttons are pressed for more than five minutes after the tape is stopped or ejected.

A playful animation will appear whenever you rewind, fast forward, or insert a tape.



Inserting the batteries
Insert two size AA (R6) batteries by matching the + and – on the batteries to the diagram inside the battery compartment.
Insert the negative (–) end first, then push in and down until the positive (+) end clicks into place.

Program your Remote Commander® remote control!

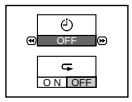
You can set your remote control to control the power, channel, volume, and video input of your TV.
First find the manufacturer's name of your TV. Then, while holding down the TV power button (button TV I/⏻) on the remote control, press the operation buttons in the order shown in the chart.

Manufacturer	Press
Sony	► then ■
Akai/AOC/Emerson/Gold Star/J.C.Penney/Marantz/MGA/Mitsubishi/NEC/Philco/RCA/Wards	► then ❚❚
Centurion/Curtis-Mathes/Daytron/J.C.Penney/Magnavox/MGA/Mitsubishi/NEC/Sampo/Scott/Sylvania/Wards/York	►► then ■
Coronado/Emerson/Gold Star/Hitachi/KMC/Magnavox/Philco/Portland/Sharp/Teknika/Wards	► then ◄◄
Emerson/Radio Shack/Teknika	◄◄ then ►
Fisher/Sanyo/Sears	►► then ►
General Electric/Panasonic/Quasar	■ then ◄◄

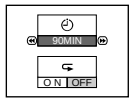
Manufacturer	Press
General Electric/RCA/Sears	►► then ❚❚
Gold Star/MGA/Mitsubishi	❚❚ then ►
Hitachi	► then ►►
JVC	►► then ◄◄
Magnavox/Philips/Sylvania/Teknika	■ then ►
Marantz/MGA/Mitsubishi	◄◄ then ❚❚
Panasonic	❚❚ then ►►
Pioneer	◄◄ then ►►
Quasar/Sharp	❚❚ then ■
Radio Shack/Sharp	■ then ►►
Sears/Toshiba	■ then ❚❚
Zenith	◄◄ then ■

A Play Timer

The Play Timer function allows you to control the amount of time your child watches a video. For example, let's say you want your child to watch a cartoon for 90 minutes.



1 Press the PLAY TIMER SET UP button for more than five seconds.
The set up screen appears on your TV.



2 Press the ►► (fast forward) or ◄◄ (rewind) buttons to select 90 minutes.
The time will change in thirty minute increments. If you continue to press either the ►► (fast forward) or ◄◄ (rewind) button, the playing time will scroll as follows:
OFF ⟷ 30 ⟷ 60 ⟷ 90 ⟷ 120 ⟷ 150 ⟷ 180 ⟷ OFF

3 After you select the playing time, press the PLAY TIMER SET UP button.
The ON/OFF row of the ⟲ (repeat) option is highlighted.

4 Press the ►► (fast forward) or ◄◄ (rewind) button to set the repeat function ON or OFF.
If you select ON and the tape reaches the end before the timer is up, it will automatically rewind and play the tape from the beginning.

5 Press the PLAY TIMER SET UP button again.
The set up screen will disappear and the timer will start. Follow the steps above to start watching a video.

When your child is watching a video, all of the buttons (except the ● REC (record) button) will work. After the set playing time has elapsed, the power will turn off and all of the buttons will be locked for one hour. If you press a button while the VCR is locked, the light on the POWER I/⏻ button will flash for five seconds.

To check the remaining time

Press the PLAY TIMER SET UP button once. The remaining time will appear on your TV screen. When five minutes are left, the remaining time will automatically appear on your TV screen for 30 seconds.

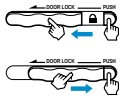
To cancel the Play Timer

Press the PLAY TIMER SET UP button for more than five seconds. When the set up screen appears on your TV, use the ►► (fast forward) or ◄◄ (rewind) buttons to set the timer to OFF.

Notes

- As soon as you complete step 5 above, the timer will start to run even if you turn off the VCR. This means that the VCR may enter the lock mode while the power is off, or that when you turn the VCR back on, the Play Timer will return to the last setting you made. Follow the explanations above to change or cancel the Play Timer.
- The repeat function will rewind the tape no more than five times, regardless of the tape length or timer setting.

B Cassette Door Lock (Safety Lock)



You can lock the cassette door to prevent your child from inserting or ejecting cassette tapes. To lock the door, press down the PUSH button and move the DOOR LOCK slide to the left until it clicks in place.

To unlock the door, press down the PUSH button and move the DOOR LOCK slide to the right.

C Recording and Tape Speed Buttons

You can use this VCR to record images input through the LINE IN jacks. For example, let's say you want to record images of your child that you took with your video camera.

1 Press the SP/EP button to set the tape speed.
EP (Extended Play) provides recording time three times as long as SP (Standard Play). However, SP produces better picture and audio quality.

2 Connect your video camera's LINE OUT jacks to the LINE IN jacks on the back of this VCR, and insert a blank tape with its safety tab intact into this VCR. (If you are recording a program on your TV, be sure to disconnect the VCR's LINE OUT jacks from your TV's LINE IN jack and set the TV's TV/VIDEO button to TV.)

3 Press the ● REC (record) button on this VCR.

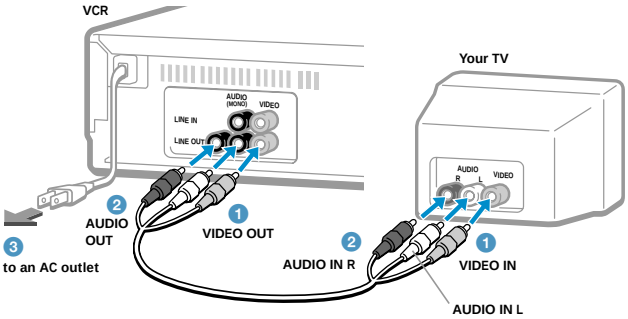
4 Start playing the tape in your video camera.
The REC mark and tape speed (EP or SP) appear on your TV screen. To stop recording, press ■ STOP.

Note

- The ● REC button will not function when the Play Timer is activated. Cancel the Play Timer before you make a recording.

Connections

Follow the steps below to connect your TV to the VCR.



Step 1

Using the supplied audio/video cable, connect one of the yellow plugs to VIDEO of LINE OUT on this VCR, and the other yellow plug to VIDEO of LINE IN on your TV.

Step 2

Connect both of the red and white plugs, in any order, to the black AUDIO LINE OUT jacks on this VCR, and the other ends to the AUDIO LINE IN jacks on your TV. If your TV is monaural (only one AUDIO LINE IN jack), you only need to use one of the red or white plugs. Just be sure to connect the same color plug to both the VCR and your TV.

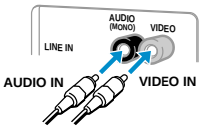
Step 3

Plug in the power cord to an AC outlet.

Note

- If your TV only has an RF jack (antenna jack), you need to use an RF modulator (not supplied) to connect this VCR. Refer to your modulator's instruction manual for further details.

Using the LINE IN jacks



When you want to use this VCR to make a recording, connect LINE IN on this VCR to LINE OUT of your other video source (such as a video camera, TV, or another video deck) using an audio/video cable (not supplied). If your other video source has a stereo LINE OUT (three jacks), use the audio/video cable VMC-910MS (sold separately). Play the original tape on the other video source and use this VCR to make the recording. See "Recording and Tape Speed Buttons" on the reverse for more information.

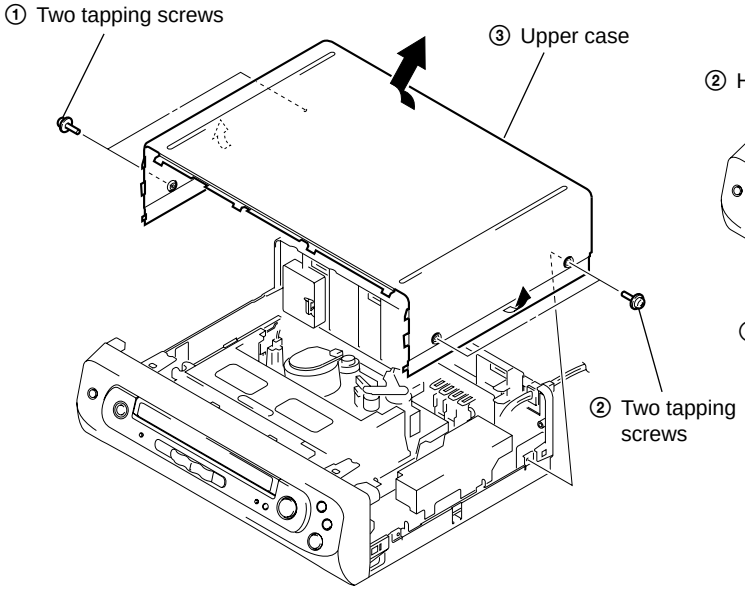
Note

- If you connect your TV's LINE OUT jacks to the LINE IN jacks, be sure to disconnect the VCR's LINE OUT jacks from your TV's LINE IN jacks.

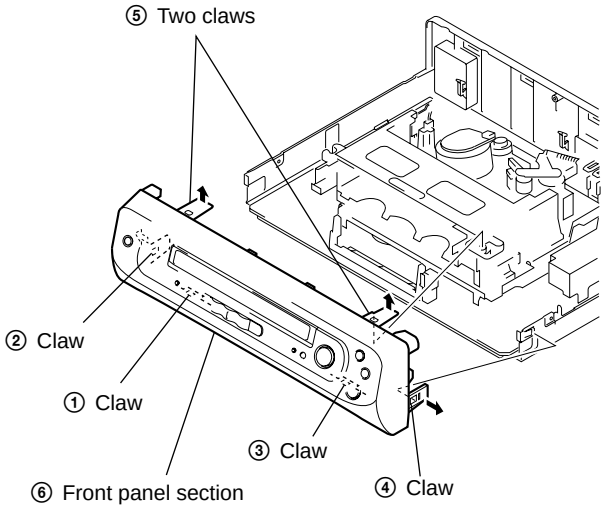
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

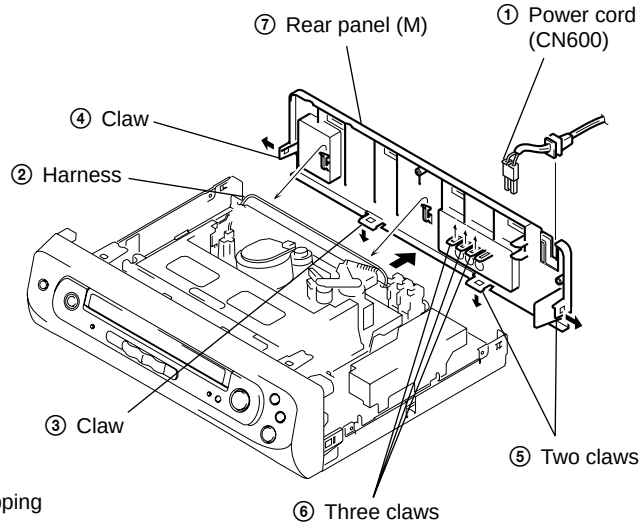
2-1. UPPER CASE REMOVAL



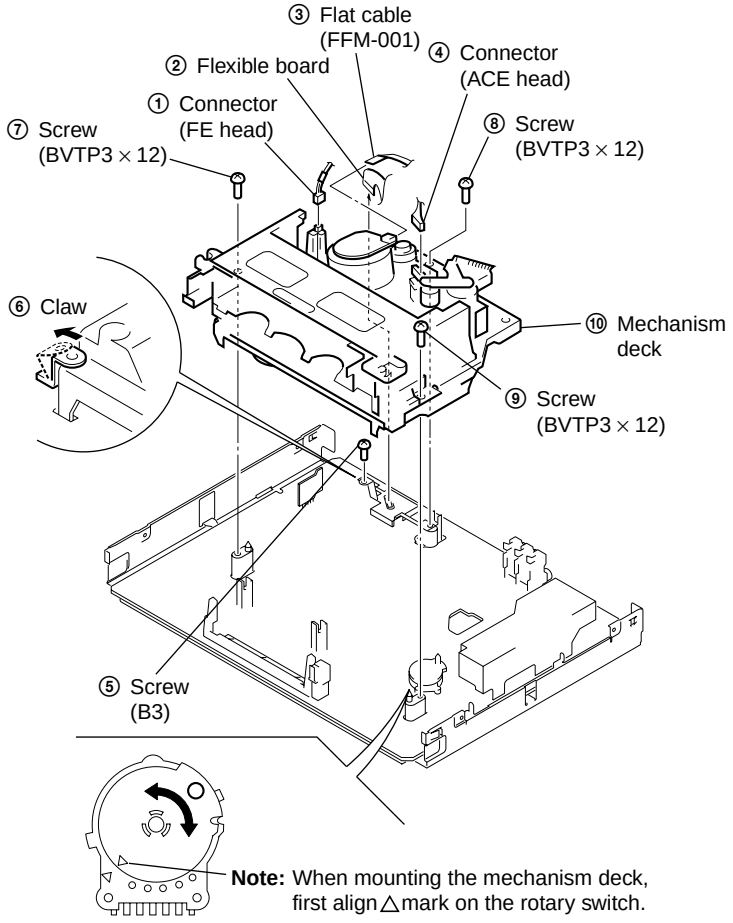
2-2. FRONT PANEL SECTION REMOVAL



2-3. REAR PANEL (M) REMOVAL

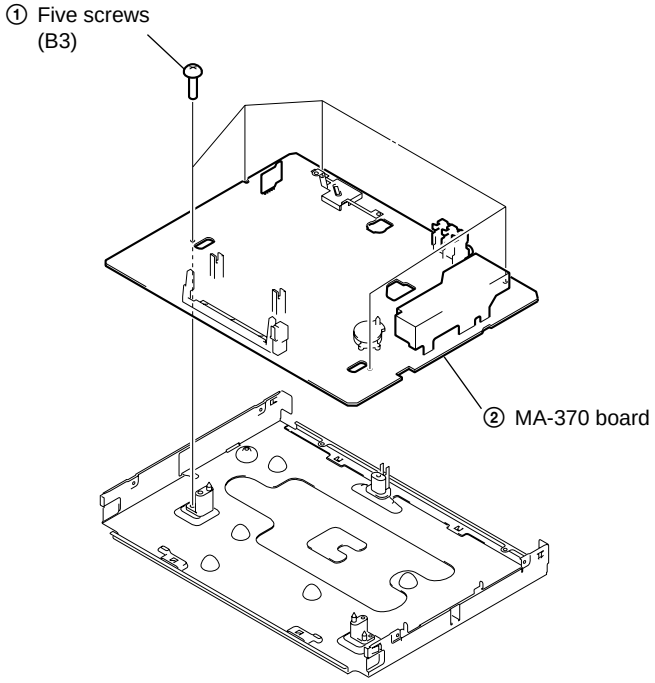


2-4. MECHANISM DECK REMOVAL

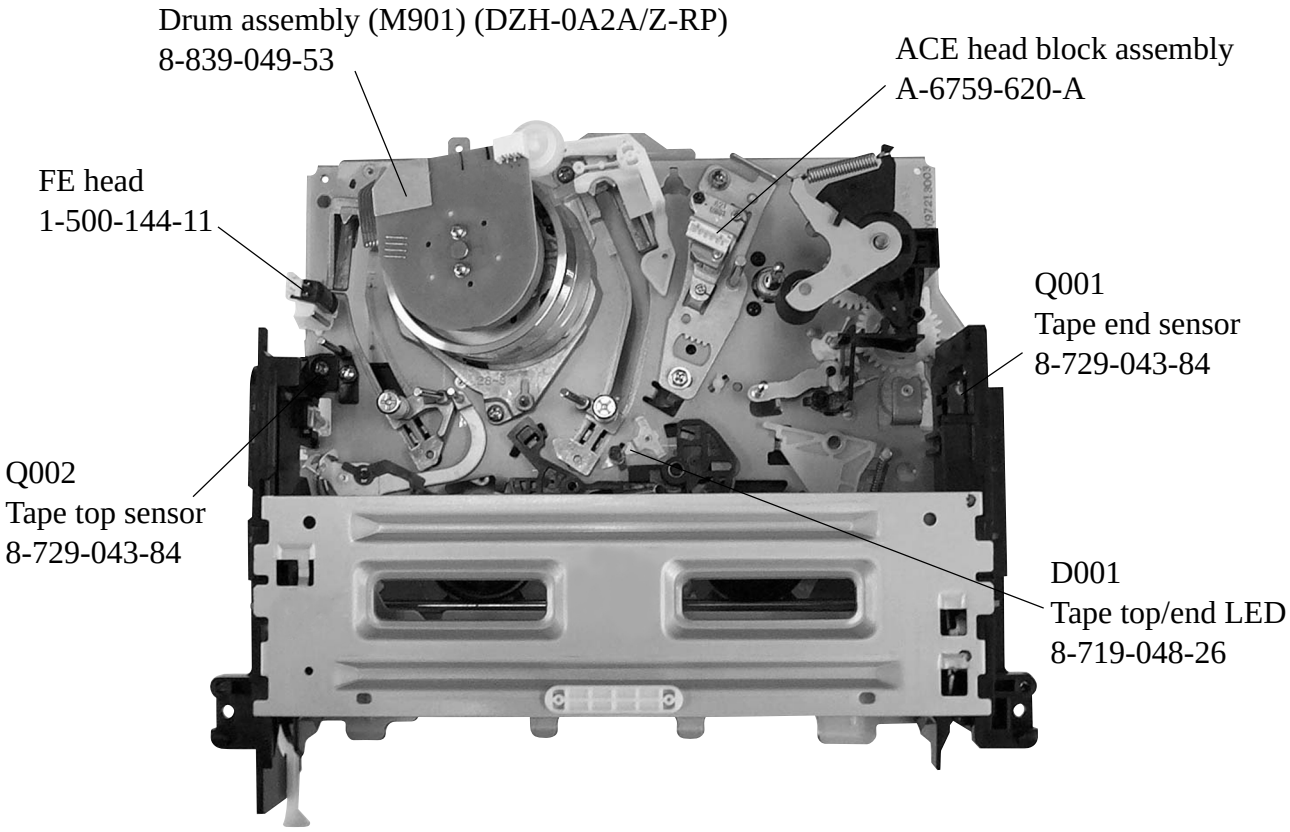


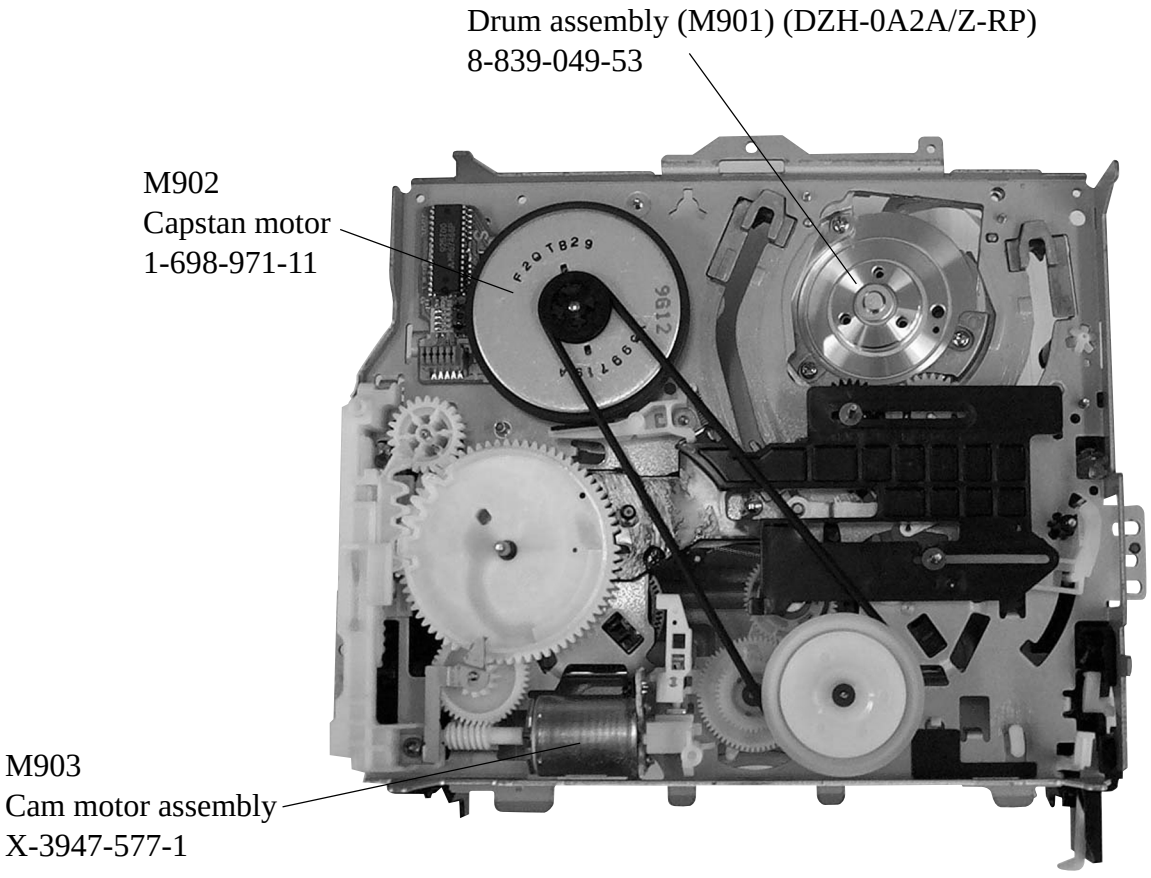
Note: When mounting the mechanism deck, first align △mark on the rotary switch.

2-5. MA-370 BOARD REMOVAL

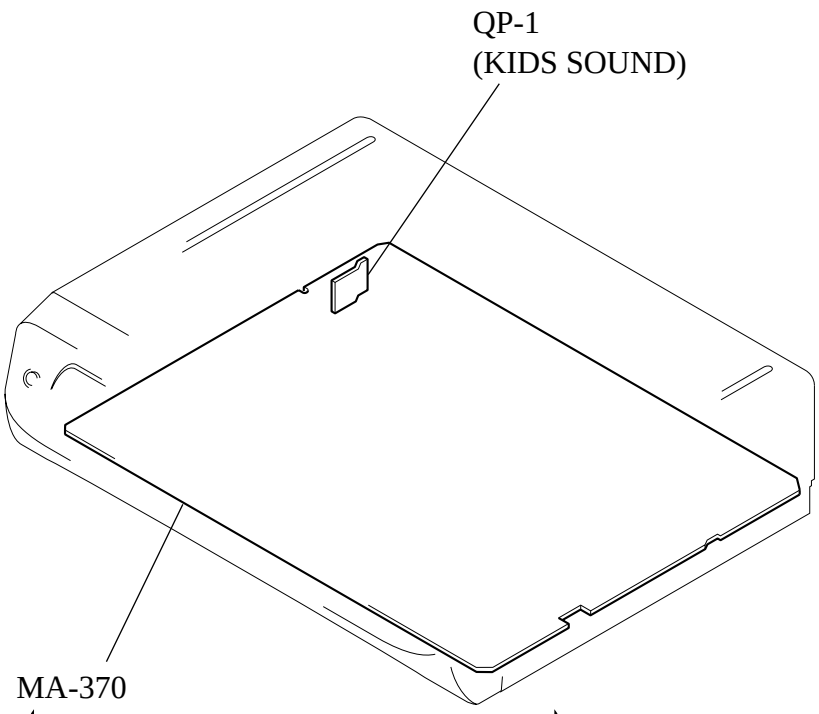


2-6. INTERNAL VIEWS



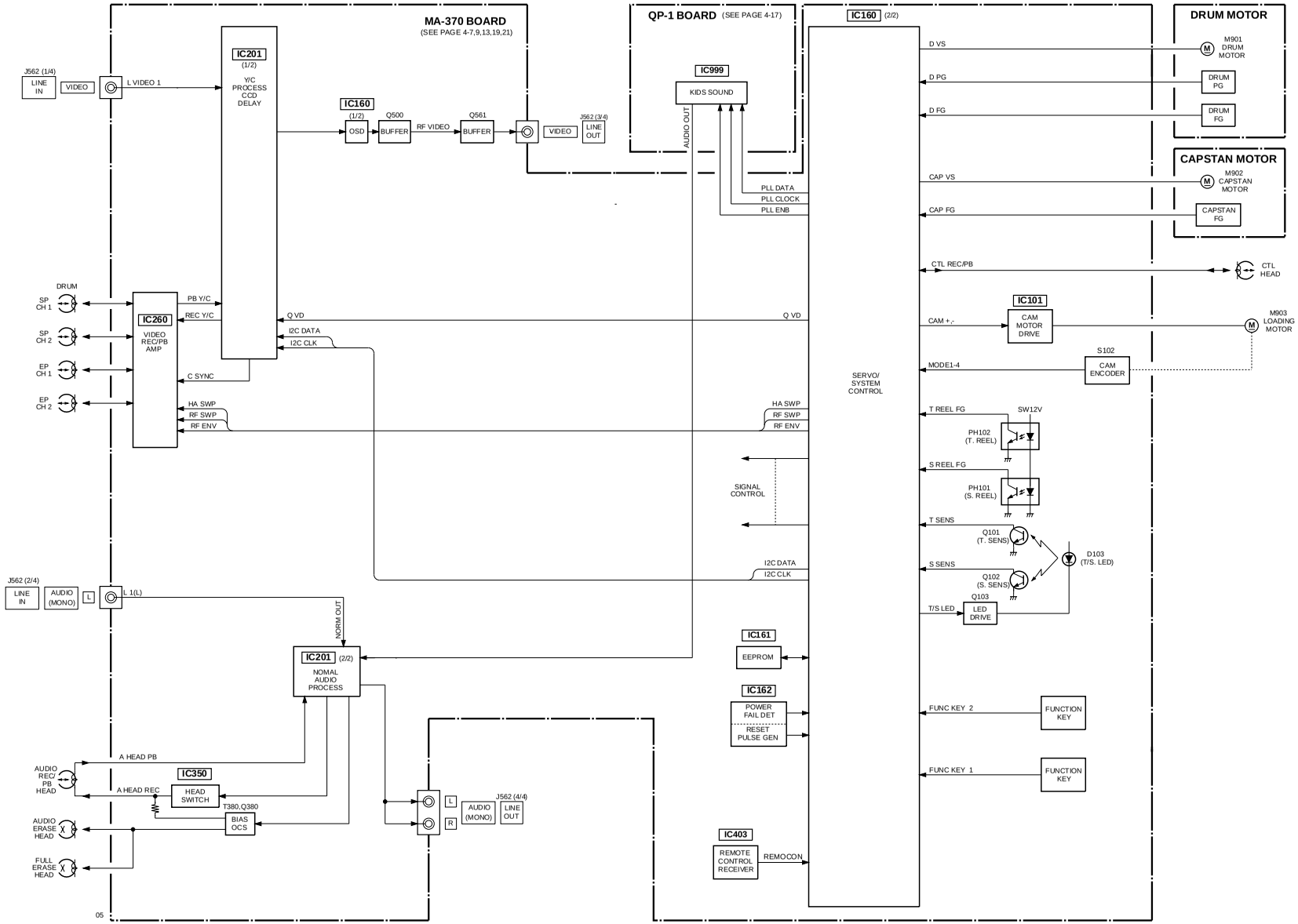


2-7. CIRCUIT BOARDS LOCATION

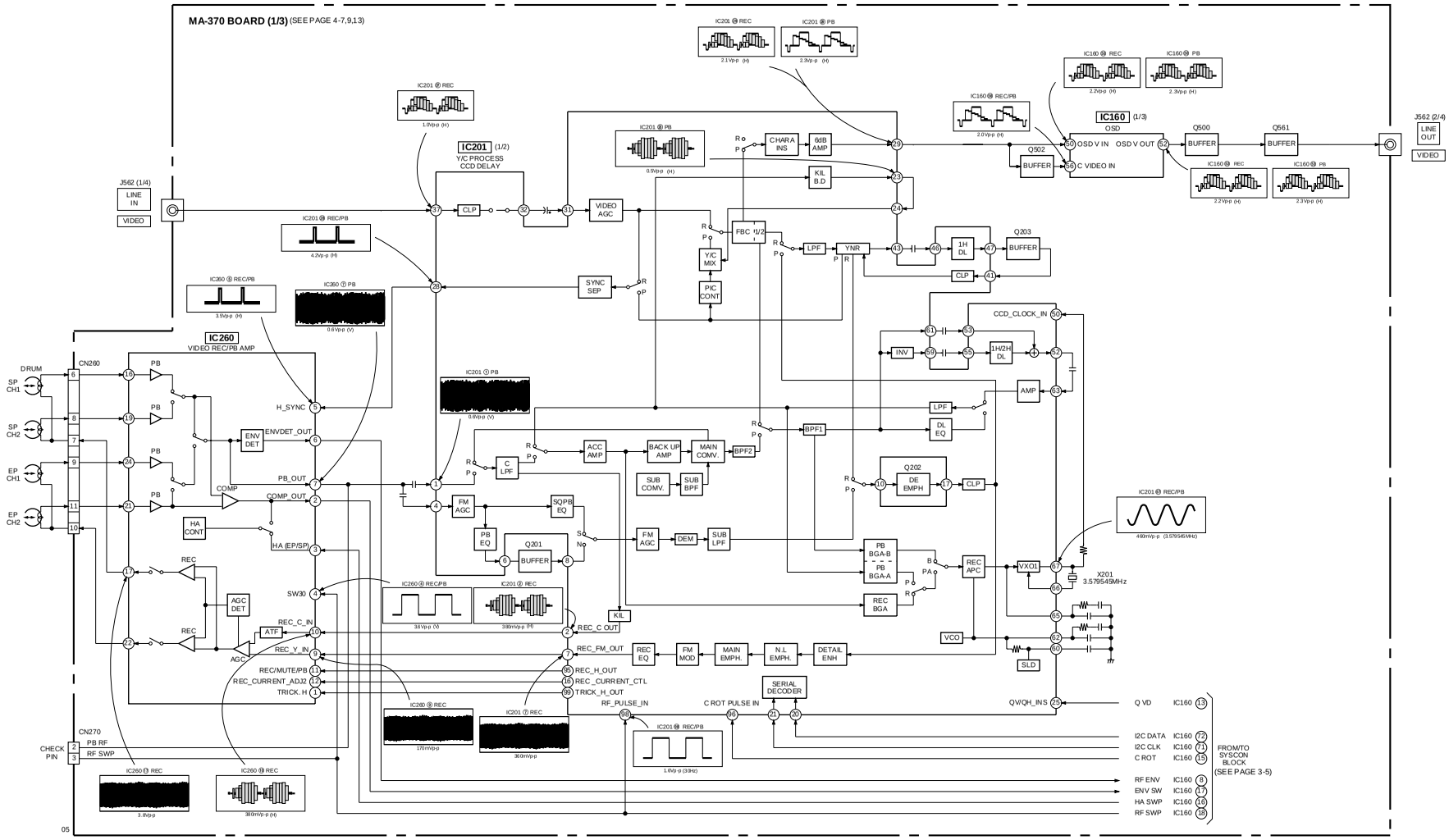


SECTION 3
BLOCK DIAGRAMS

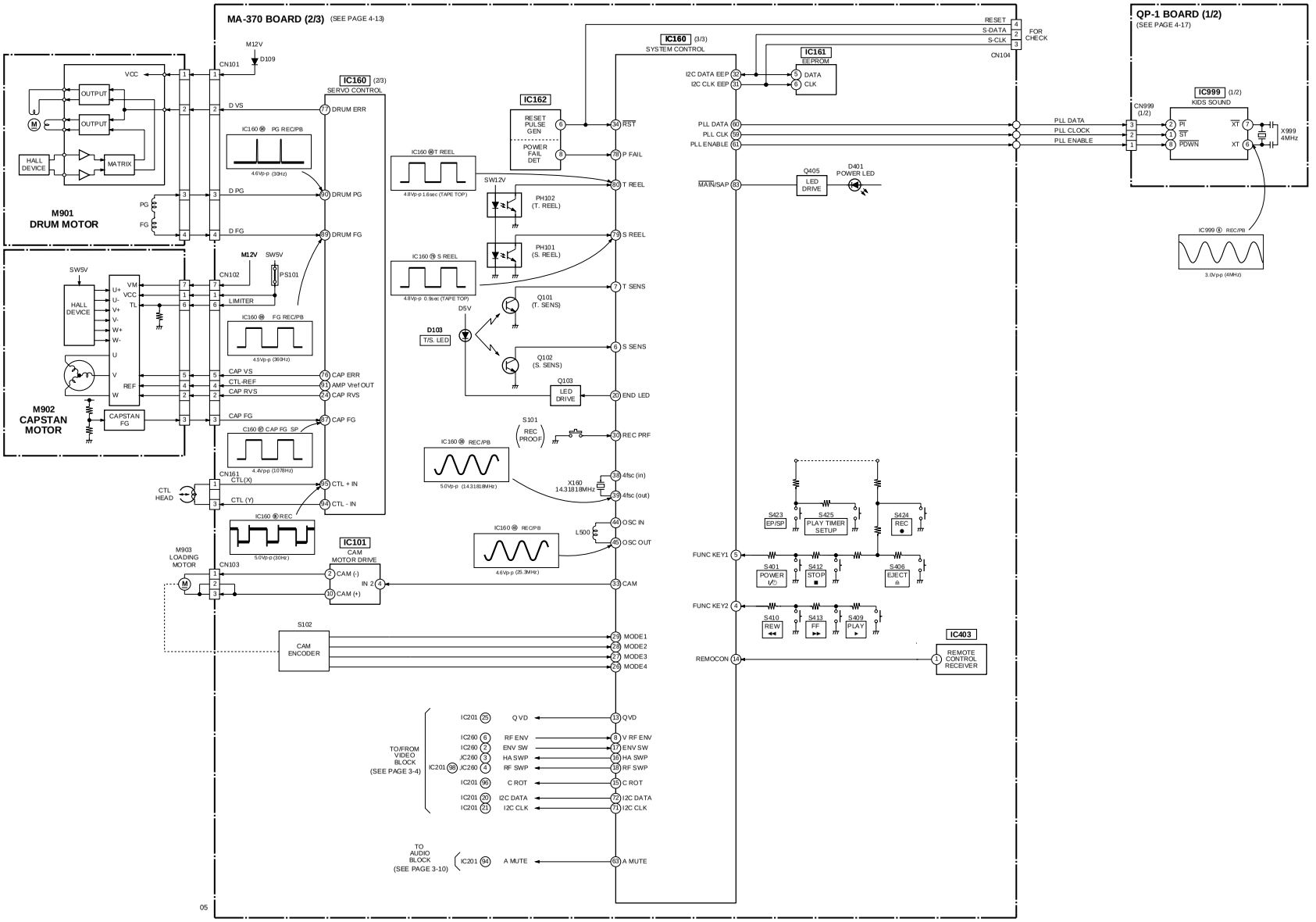
3-1. OVERALL BLOCK DIAGRAM



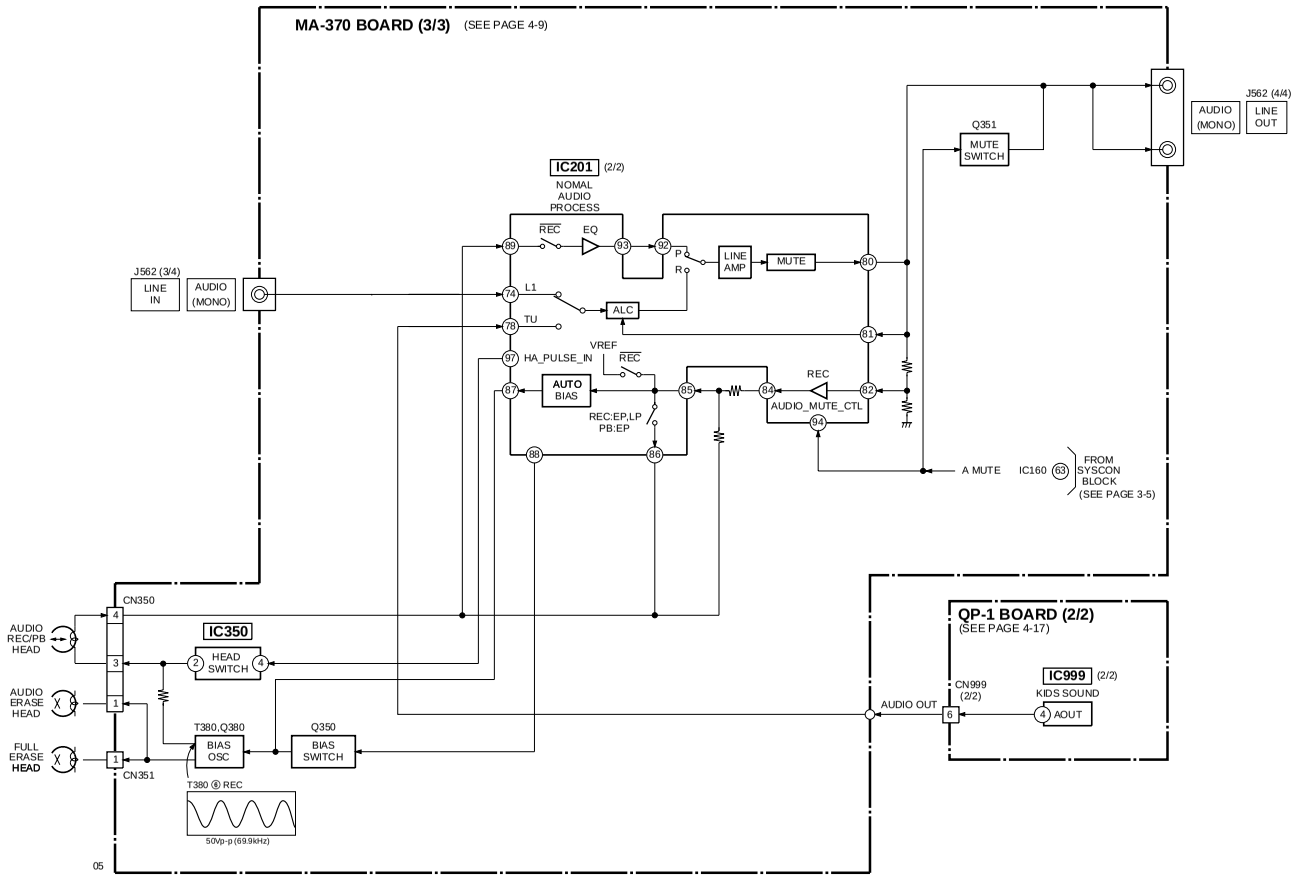
3-2. VIDEO BLOCK DIAGRAM



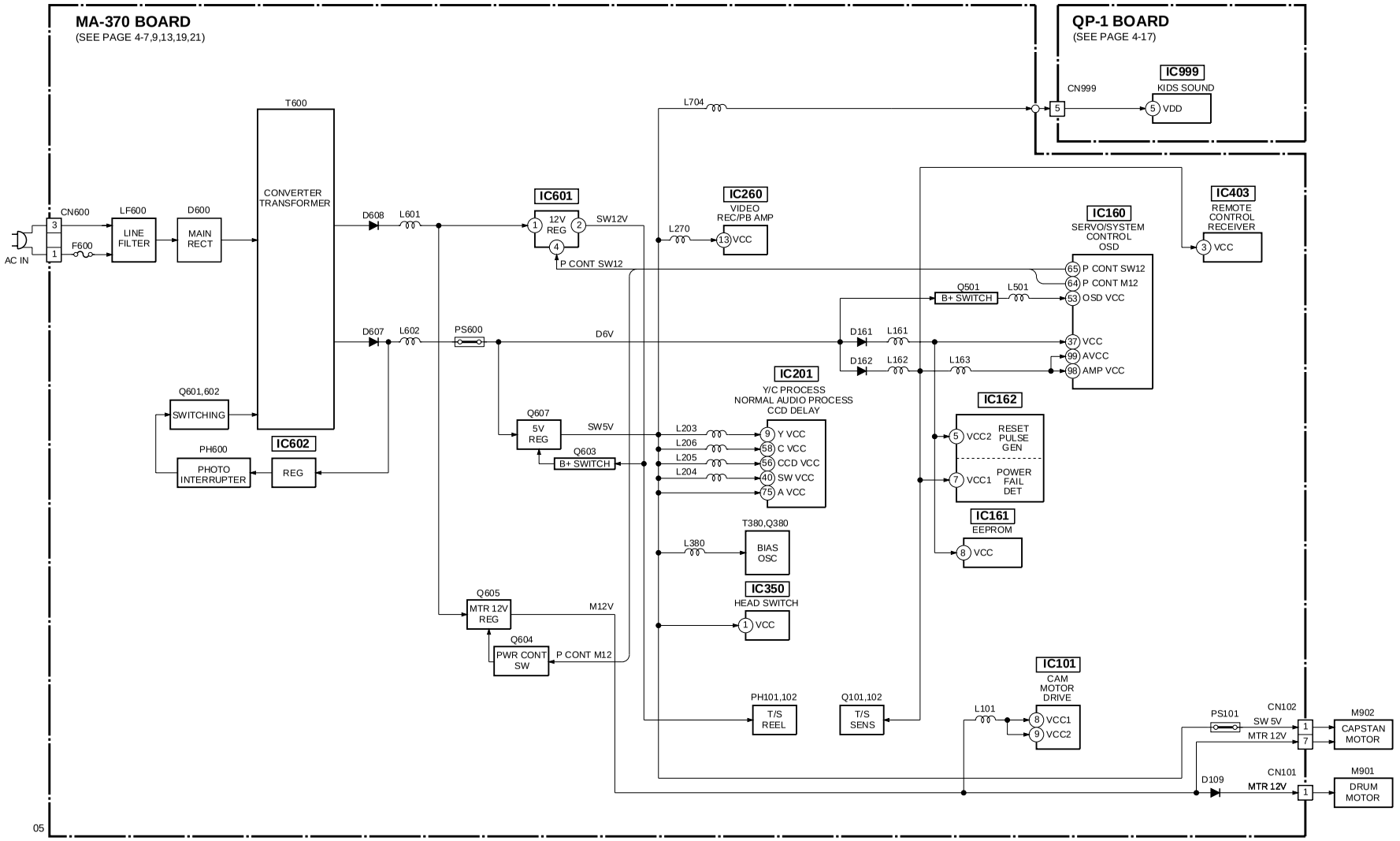
3-3. SERVO/SYSTEM CONTROL BLOCK DIAGRAM



3-4. AUDIO BLOCK DIAGRAM



3-5. POWER BLOCK DIAGRAM



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For printed wiring board:

- ○——— : indicates a lead wire mounted on the component side.
- ●——— : indicates a lead wire mounted on the printed side.
- ▒▒▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

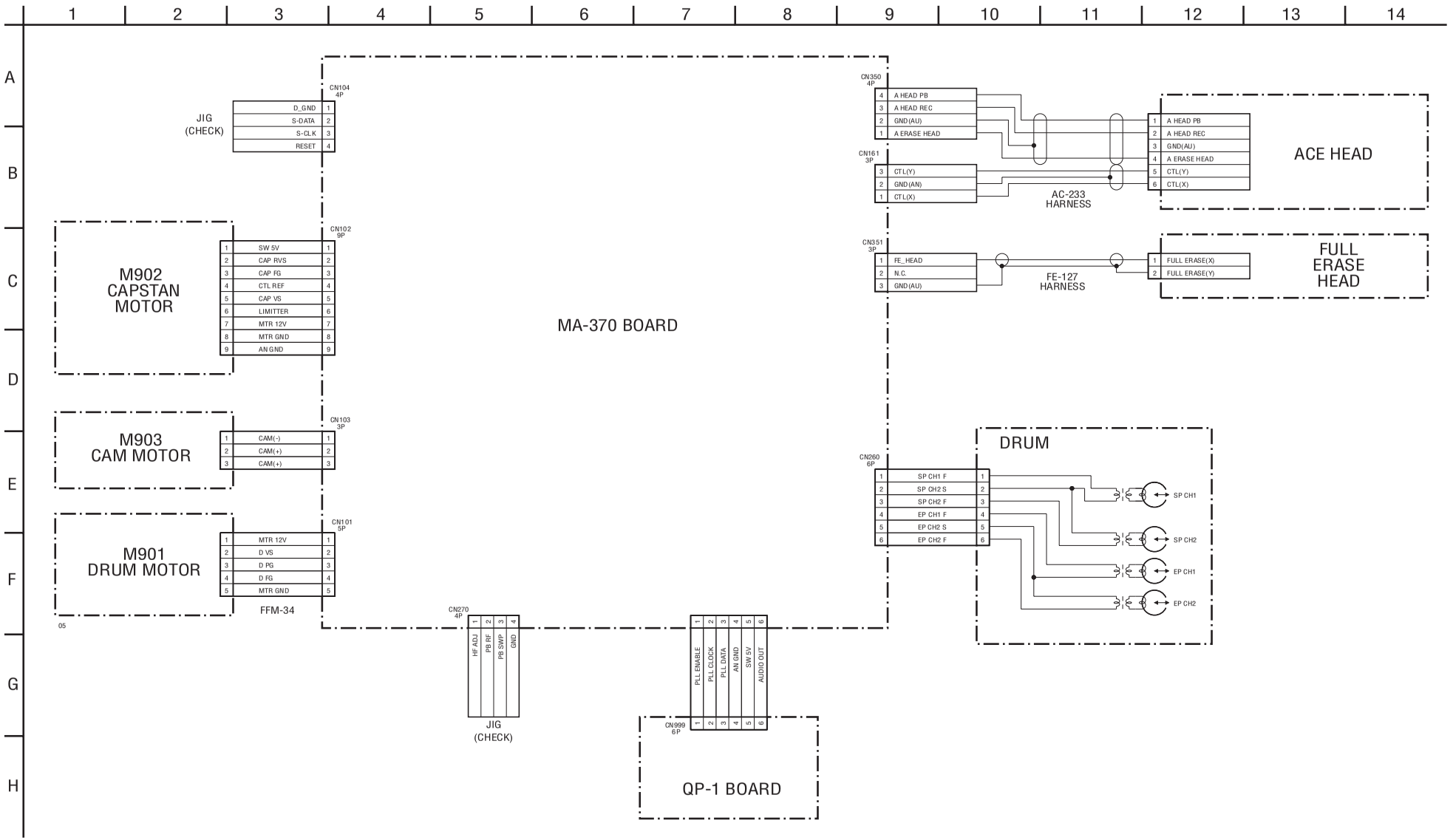
For schematic Diagram:

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4 W (Chip resistors : 1/10 W) unless otherwise specified.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All capacitors are in µF unless otherwise noted. pF : µµF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- △ : internal component.
- B + : B+ Line.
- B − : B– Line.
- Circled numbers refer to waveforms.
- Voltages are dc between measurement point.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC 10MW).
- Voltage variations may be noted due to normal production tolerances.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

4-1. FRAME SCHEMATIC DIAGRAM



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

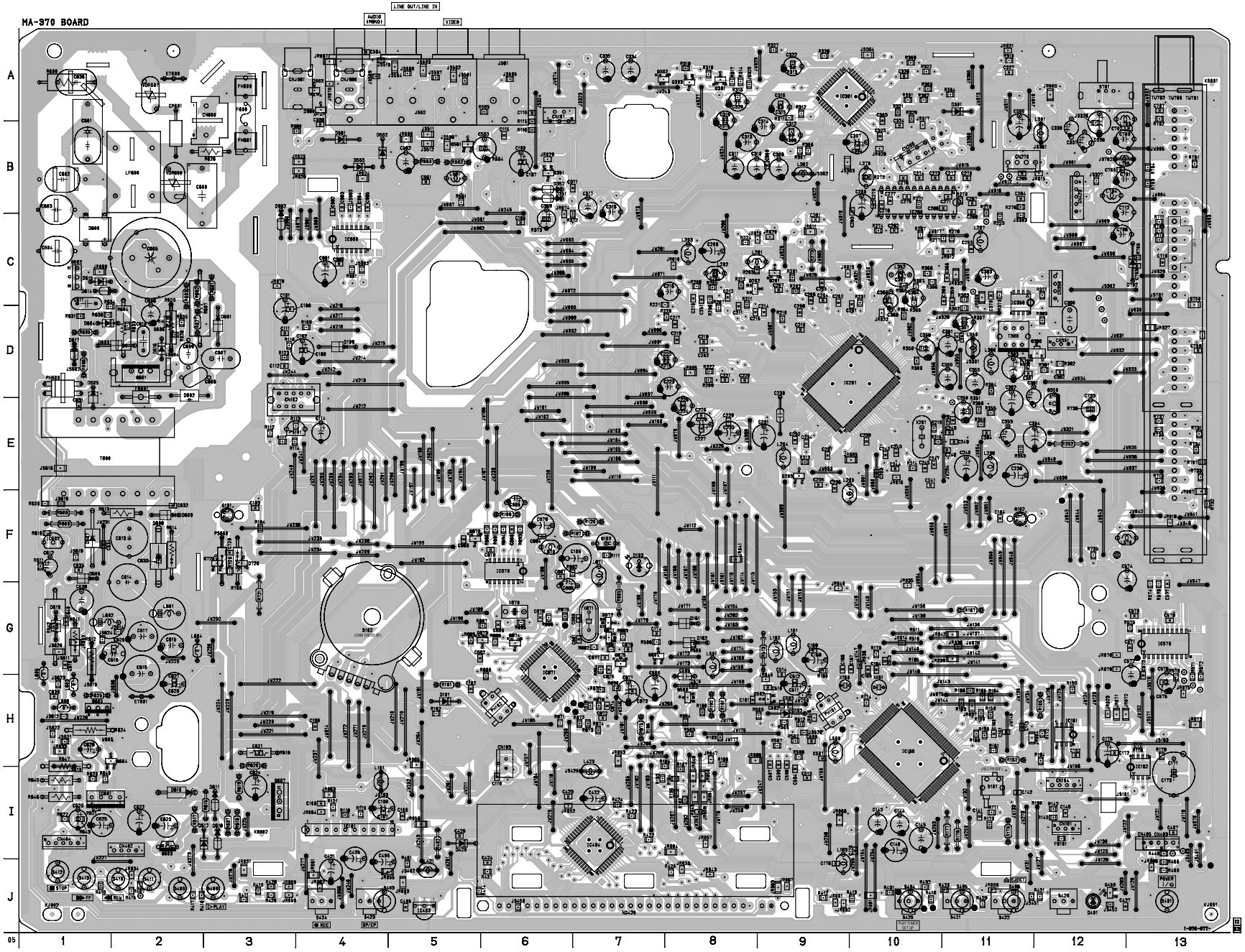
There are few cases that the part isn't mounted in this model is printed on this diagram.

MA-370 (HEAD AMP, VIDEO, AUDIO, I/O, SERVO/SYSTEM CONTROL, POWER SUPPLY, MODE CONTROL) PRINTED WIRING BOARD

– Ref. No.: MA-370 board; 1,000 series –

MA-370 BOARD

D103	F-7
D109	D-4
D161	G-8
D162	G-8
D351	B-6
D352	B-6
D401	J-12
D561	B-4
D600	C-1
D601	D-3
D602	D-2
D603	D-1
D604	D-1
D605	D-1
D606	F-1
D607	F-1
D608	F-2
D610	I-2
D611	I-3
D612	I-3
D618	I-3
D619	G-1
D982	C-3
IC101	I-4
IC160	H-10
IC161	H-12
IC162	I-13
IC201	D-9
IC260	B-10
IC350	C-11
IC403	J-5
IC601	I-1
IC602	F-1
Q101	F-3
Q102	E-11
Q103	F-7
Q201	C-9
Q202	C-8
Q203	E-9
Q350	D-12
Q351	B-6
Q380	D-12
Q450	J-12
Q500	C-8
Q501	G-7
Q502	H-9
Q561	B-5
Q601	D-2
Q602	C-1
Q603	I-2
Q604	H-2
Q605	H-1
Q607	I-3



4-5

HEAD AMP, VIDEO, AUDIO, I/O, SERVO/SYSTEM CONTROL, POWER SUPPLY, MODE CONTROL

MA-370

MA-370 (HEAD AMP) SCHEMATIC DIAGRAM
– Ref. No.: MA-370 board; 1,000 series –

MA-370 BOARD (1/6)

DRUM

EP CH2
EP CH1
SP CH2
SP CH1

CN260 6P
6 EP CH2 F
5 EP CH2 S
4 EP CH1 F
3 SP CH2 F
2 SP CH2 S
1 SP CH1 F

JL260
JL261
JL264
JL265
JL263
JL262

IC260
VIDEO REC/PB AMP

IC260 LA70011

VCC
REC_CURRET AJ1
REC_AGC_FILT
SP_L_IN
REC_SP_OUT
PB FILT
SP_H_IN
GND
EP_L_IN
REC_EP_OUT
PB_FILT
EP_H_IN

REC_CURRENT ADJ2
REC/MUTE/PB
REC_C_IN
REC_Y_IN
GND
PB_OUT
ENVDET_OUT
H_SYNC
SW30
HA(EP/SP)
COMP_OUT
TRICK_H

B+

C280 100u 10V
L270 100uH
C279 0.1u
R272 1800
C278 0.022u
R271 470
C276 0.1u
C275 0.01u
R270 470
C272 0.1u
C271 0.01u
C283 0.01u
R273 JW
R274 3900
C281 0.01u
C282 0.01u
R276 6800
R267 0
C284 0.22u
R277 22k
R278 22k
R279 22k
C267 0.1u
C286 100p
C285 0.01u

CN270 4P
JL271 1 HF ADJ
JL272 2 PB RF
JL273 3 RF SWP
JL274 4 GND
JIG (CHECK)

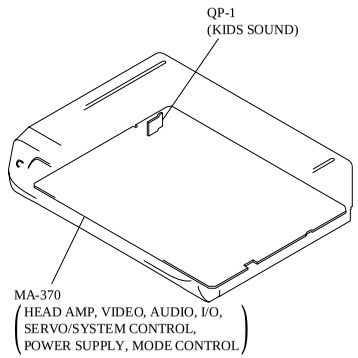
JL277 REC_CURR_ADJ
JL278 REC_H
JL279 REC_C
REC_Y_RF
JL280 PB_RF
JL281 COMP_SYNC
JL282 TRICK_H
① MA-370 BOARD (2/6) (SEE PAGE 4-10)

JL284 RF_ENV
RF_SWP
JL286 HA_SWP
JL287 ENV_SW
② MA-370 BOARD (3/6) (SEE PAGE 4-13)

SW_5V
GND (AN)
③ MA-370 BOARD (6/6) (SEE PAGE 4-22)

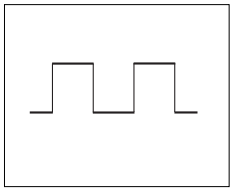
NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	➡
PB			⇨



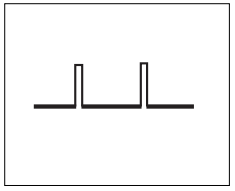
• Waveforms

❶ IC260 ④ REC/PB



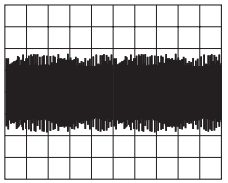
3.6 Vp-p (V)

❷ IC260 ⑤ REC/PB



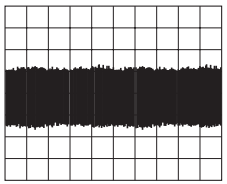
3.5 Vp-p (H)

❸ IC260 ⑦ PB



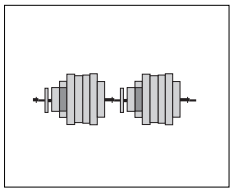
0.6 Vp-p (V)

❹ IC260 ⑨ REC



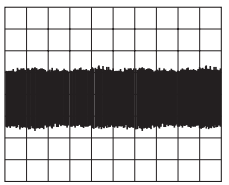
170 mVp-p

❺ IC260 ⑩ REC



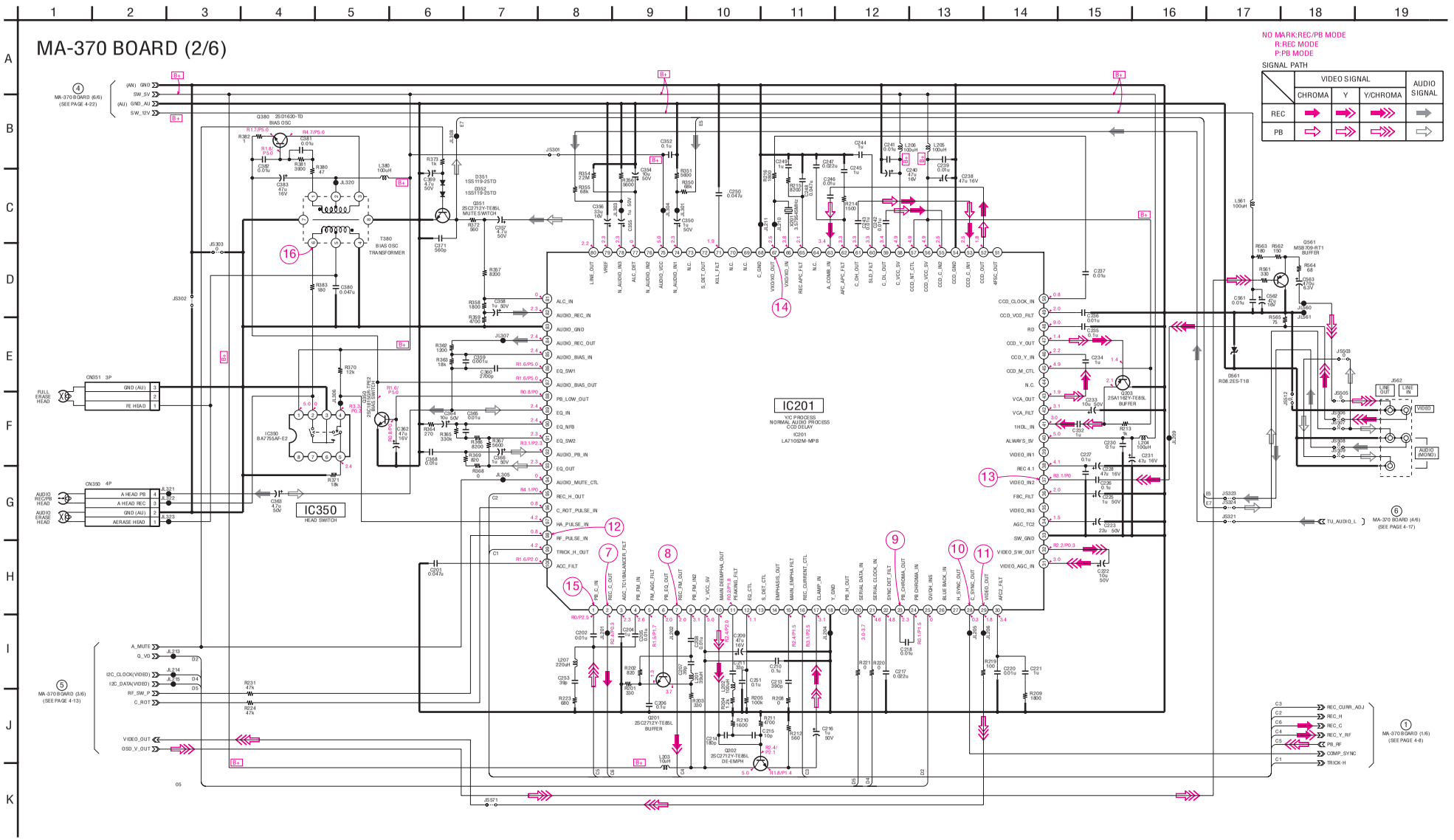
380 mVp-p (H)

❻ IC260 ⑰ REC



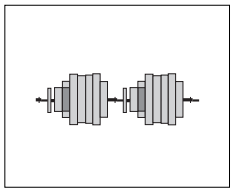
3.8 Vp-p

MA-370 (VIDEO, AUDIO) SCHEMATIC DIAGRAM • **See page 4-5 for printed wiring board.**
– Ref. No.: MA-370 board; 1,000 series –


MA-370 BOARD (2/6)
NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE
SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO SIGNAL
REC
PB
IC201
Y/C PROCESS
NORMAL AUDIO PROCESS
CCD DELAY
IC201
LA7105M-MPB
IC350
HEAD SWITCH
IC350
BA7758AF-E2
BUFFER
BIAS OSC
TRANSFORMER
MUTE SWITCH
BUFFER
BUFFER
BUFFER

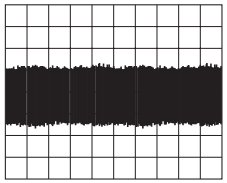
• **Waveforms**

❼ IC201 ② REC



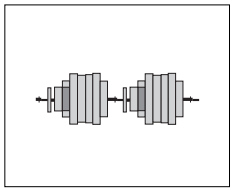
380 mVp-p (H)

❽ IC201 ⑦ REC



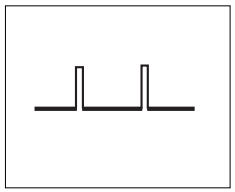
360 mVp-p

❾ IC201 ㉓ PB



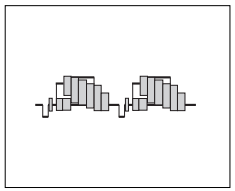
0.5 Vp-p (H)

❿ IC201 ㉘ REC/PB



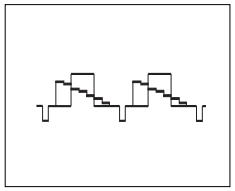
4.2 Vp-p (H)

⓫ IC201 ㉙ REC



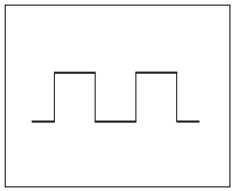
2.1 Vp-p (H)

⓫ IC201 ㉙ PB



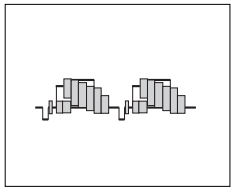
2.3 Vp-p (H)

⓬ IC201 ㊱ REC/PB



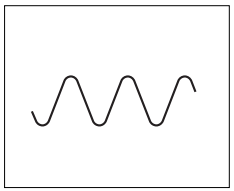
1.6 Vp-p (30 Hz)

⓭ IC201 ㊲ REC



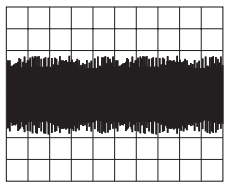
1.0 Vp-p (H)

⓮ IC201 ㊼ REC/PB



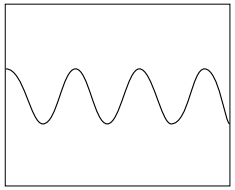
460 mVp-p (3.579545 MHz)

⓯ IC201 ① PB



0.6 Vp-p (V)

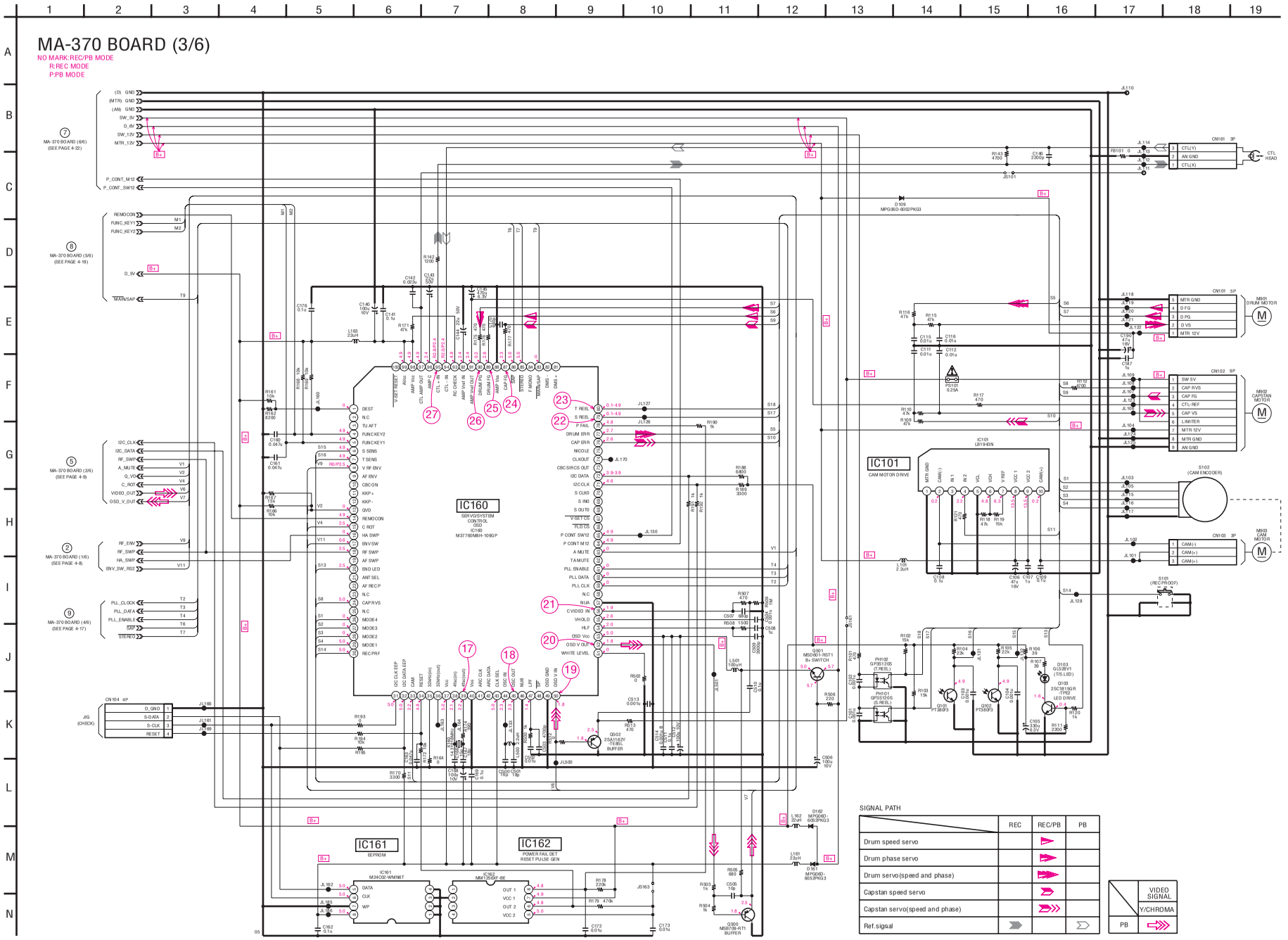
⓰ T380 ⑥ REC



50 Vp-p (69.9 kHz)

MA-370 (SERVO/SYSTEM CONTROL) SCHEMATIC DIAGRAM • See page 4-5 for printed wiring board.

– Ref. No.: MA-370 board; 1,000 series –

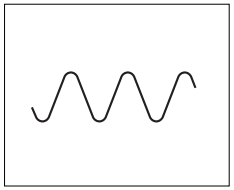


Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

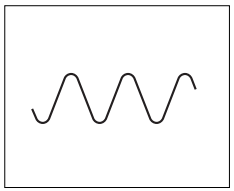
• **Waveforms**

⑰ IC160 ㊴ REC/PB



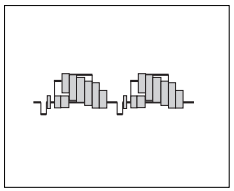
5.0 Vp-p (14.31818 MHz)

⑱ IC160 ㊺ REC/PB



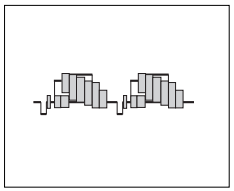
4.6 Vp-p (25.3 MHz)

⑲ IC160 ㊿ REC



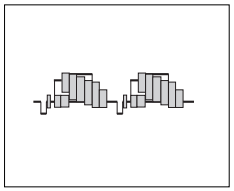
2.2 Vp-p (H)

⑲ IC160 ㊿ PB



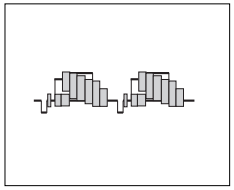
2.3 Vp-p (H)

⑳ IC160 ㊷ REC



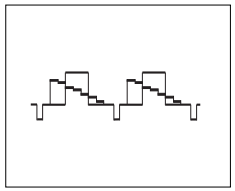
2.2 Vp-p (H)

⑳ IC160 ㊷ PB



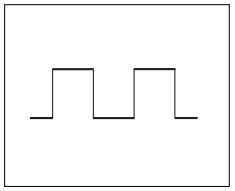
2.3 Vp-p (H)

㉑ IC160 ㊻ REC/PB



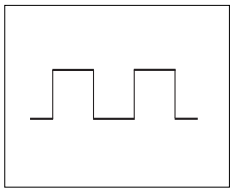
2.0 Vp-p (H)

㉒ IC160 ㊾ S REEL



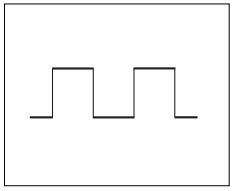
4.8 Vp-p 0.9 sec (TAPE TOP)

㉓ IC160 ㊿ T REEL



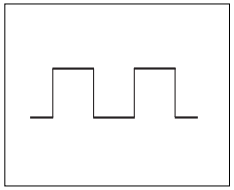
4.8 Vp-p 1.6 sec (TAPE TOP)

㉔ IC160 ㊼ (AP FG SP)



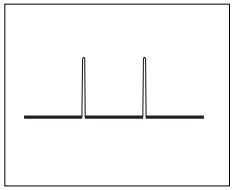
4.4 Vp-p (1078 Hz)

㉕ IC160 ㊽ FG REC/PB



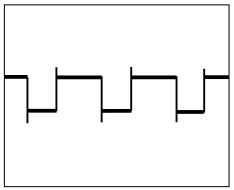
4.5 Vp-p (360 Hz)

㉖ IC160 ㊿ RG REC/PB



4.6 Vp-p (30 Hz)

㉗ IC160 ㊺ REC

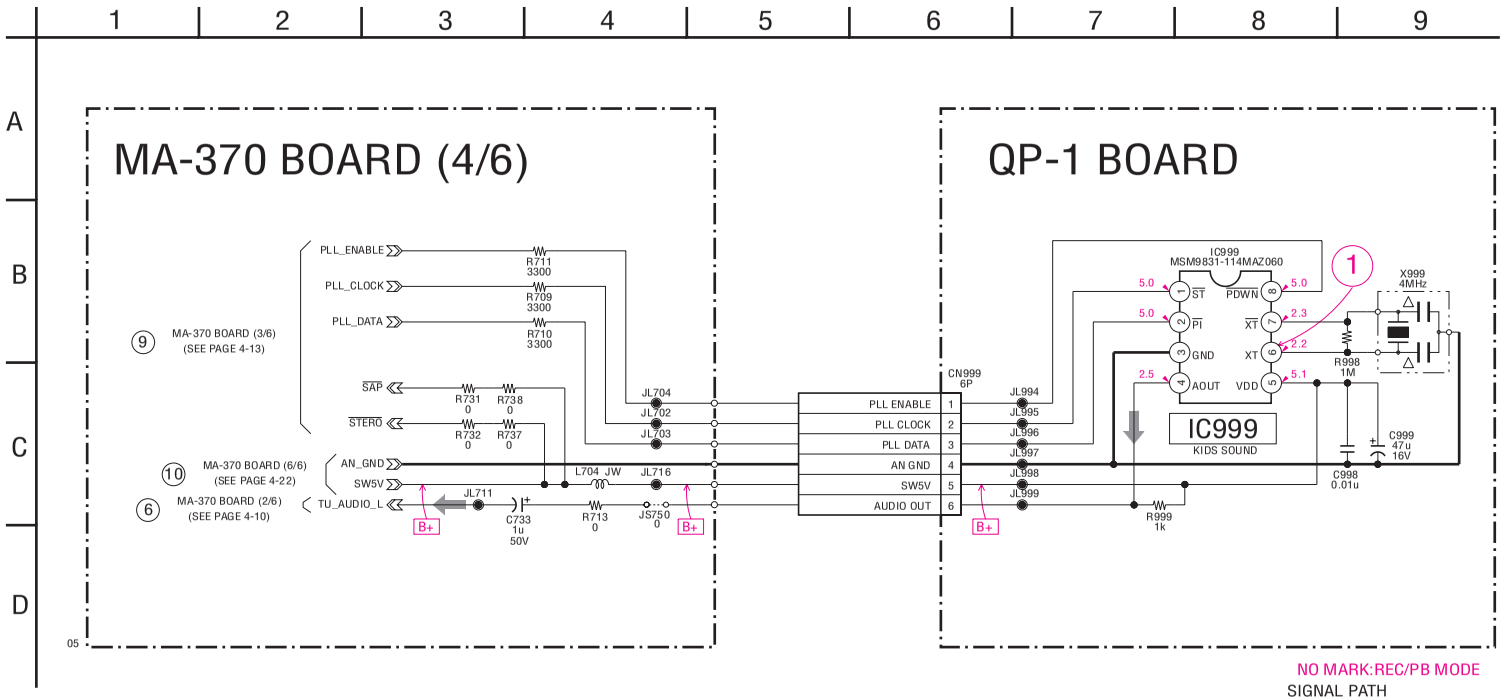


5.0 Vp-p (30 Hz)

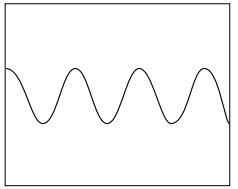
MA-370/QP-1 (KIDS SOUND) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

– Ref. No.: MA-370 board, QP-1 board; 1,000 series –

There are few cases that the part isn't mounted in this model is printed on this diagram.



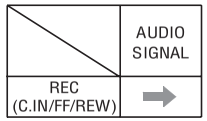
❶ IC999 ⑥ REC/PB

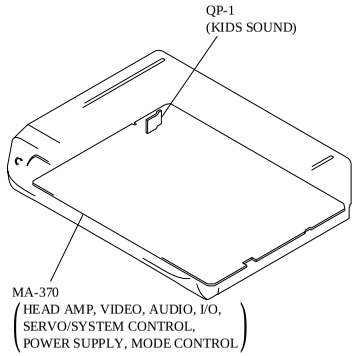


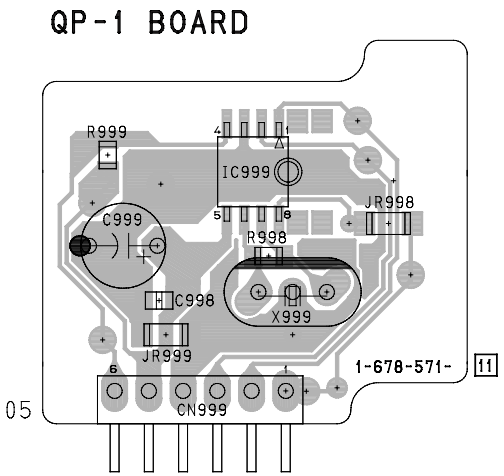
3 Vp-p (4 MHz)

NO MARK:REC/PB MODE

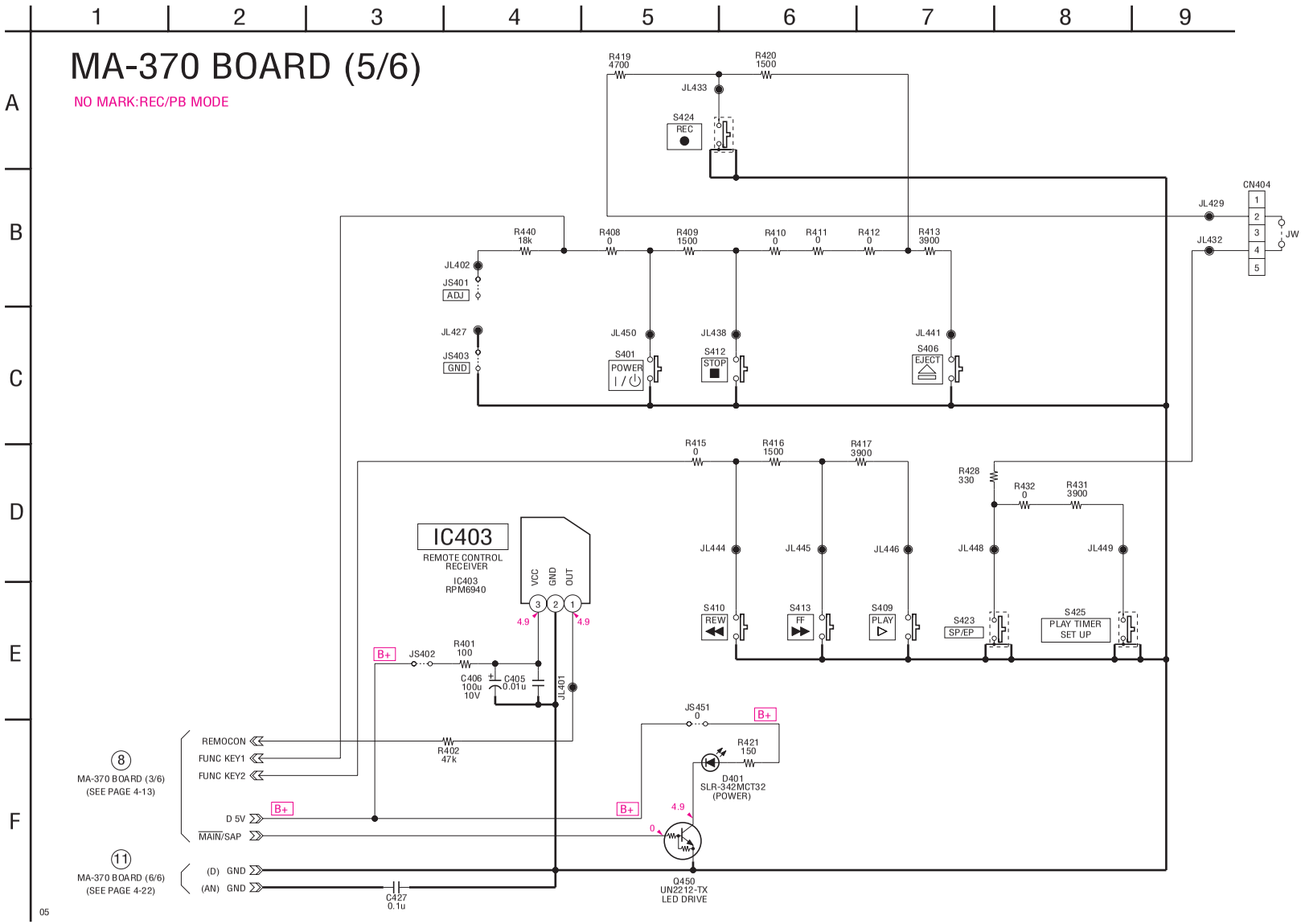
SIGNAL PATH





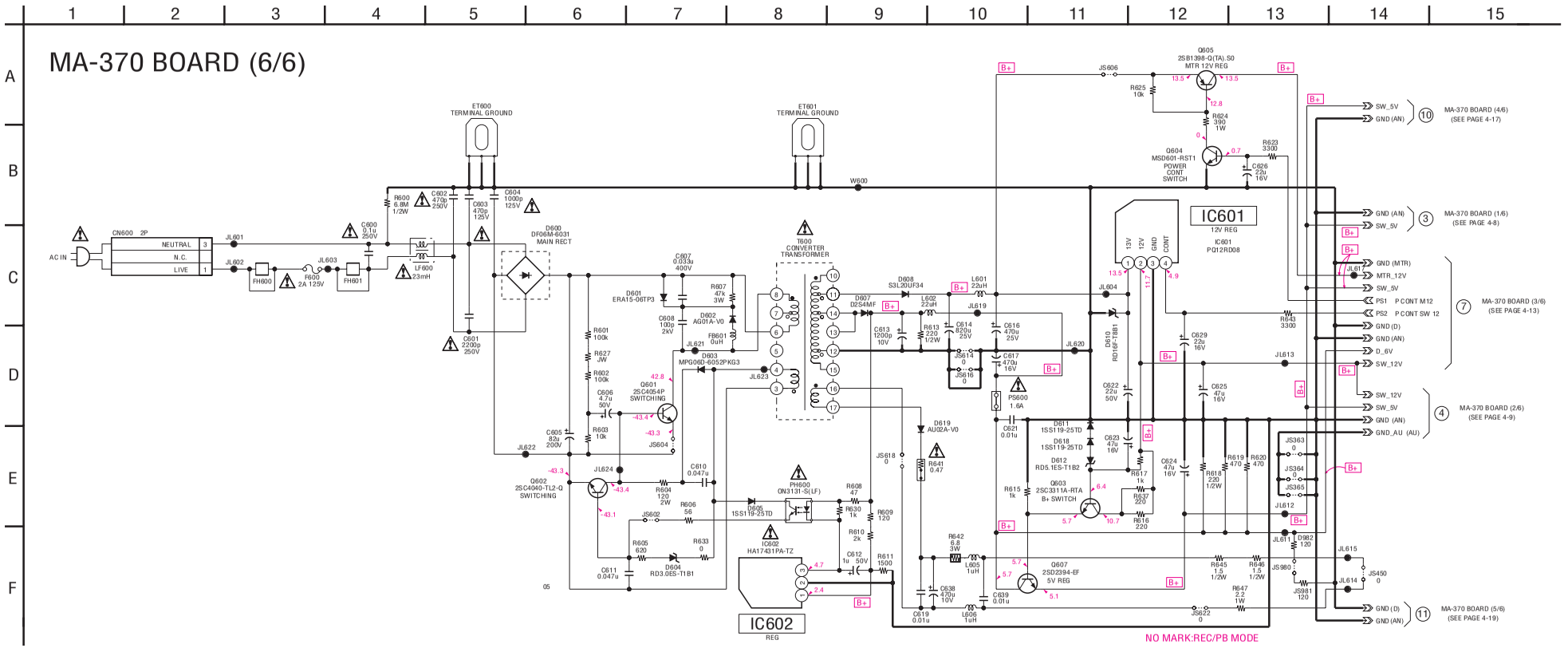


MA-370 (MODE CONTROL) SCHEMATIC DIAGRAM **• See page 4-5 for printed wiring board.**
– Ref. No.: MA-370 board; 1,000 series –



MA-370 (POWER SUPPLY) SCHEMATIC DIAGRAM **• See page 4-5 for printed wiring board.**

– Ref. No.: MA-370 board; 1,000 series –



Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-1. SYSTEM CONTROL – VIDEO/RP BLOCK INTERFACE (MA-370 BOARD IC160)

Signal	Pin No.	I/O	STOP/ FF/ REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	REC	REC • PAUSE
RF SWP	MA-370 IC160⑱	O	*1	*1	*1	*1	*1	*1
QVD	MA-370 IC160⑬	O	L	L	L	*2	L	L

*1. 30 Hz pulse with 50% duty cycle. Synchronized with rotation of drum.
*2. Normal “L”, “H” when video signal is not generated.
*3. Composite sync signal (positive polarity).

5-2. SYSTEM CONTROL – SERVO PERIPHERAL CIRCUIT INTERFACE (MA-370 BOARD IC160)

Signal	Pin No.	I/O	STOP	FF	REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	REC
CTL IN +	MA-370 IC160㉟	O	*7	*7	*7	*7	*7	*7	*1
DRUM PG	MA-370 IC160㉚	I	*3	*3	*3	*3	*3	*3	*3
DRUM FG	MA-370 IC160㉙	I	*4	*4	*4	*4	*4	*4	*4
CAP FG	MA-370 IC160㉗	I	H/L	*2	*2	*5	*5	*2	*2
CAP RVS	MA-370 IC160㉞	O	H/L	L	H	L	H	L	L
CAP ERR	MA-370 IC160㊱	O	L	*6	*6	*6	*6	*6	*6
DRUM ERR	MA-370 IC160㊱	O	*6	*6	*6	*6	*6	*6	*6

*1. 30 Hz pulse.
*2. Pulse of period in proportion to tape speed.
*3. 30 Hz “H” pulse.
*4. 360 Hz pulse.
*5. Unstable period pulse.
*6. DC voltage 1 – 5 V.
*7. Hi-Z (2.5 V).

5-3. SYSTEM CONTROL – MECHANISM BLOCK INTERFACE (MA-370 BOARD IC160)

Signal	Pin No.	I/O	EJECTED	CASSETTE LOADING	CASSETTE UNLOADING	TAPE THREAD-ING	TAPE UNTHREAD-ING	STOP	FF	REW	PB	REC
CAM	MA-370 IC160㉝	O	*5	H	L	H	L	*5	*5	*5	*5	*5
MODE 1	MA-370 IC160㉙	I	–	–	–	–	–	H	H	H	H	H
MODE 2	MA-370 IC160㉘	I	–	–	–	–	–	L	L	L	H	H
MODE 3	MA-370 IC160㉗	I	–	–	–	–	–	H	H	H	L	L
MODE 4	MA-370 IC160㉖	I	–	–	–	–	–	H	L	L	L	L
REC PRF	MA-370 IC160㉚	I	L	*1	*1	*1	*1	*1	*1	*1	*1	*1
T REEL	MA-370 IC160㊱	I	H/L	H/L	H/L	H/L	H/L	H/L	*2	*2	*2	*2
S REEL	MA-370 IC160㊴	I	H/L	H/L	H/L	*2	*2	H/L	*2	*2	*2	*2
END-LED	MA-370 IC160⑳	O	L	*3	*3	*3	*3	*3	*3	*3	*3	*3
T SENS	MA-370 IC160⑦	I	*3	*3	*3	*4	*4	*4	*4	*4	*4	*4
S SENS	MA-370 IC160⑥	I	*3	*3	*3	*4	*4	*4	*4	*4	*4	*4

*1. "L" when erasing protection tab is bent, "H" when not bent.
*2. Pulse of period in proportion to reel rotating speed.
*3. Approx. 2 msec period "H" pulse when tape top or end is detected.
*4. Normally "L". 2 msec period "H" pulse when tape top or tape end is detected.
*5. Hi-Z

5-4. SYSTEM CONTROL – SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA-370 BOARD IC160)

Signal	Pin No.	I/O	I/O Level
RESET	MA-370 IC160㉞	I	Normally “H”, “L” when service interruption is detected or restored.
I2C DATA EEP	MA-370 IC160㉜	I/O	Serial communication data to EEPROM IC161.
I2C CLOCK EEP	MA-370 IC160㉛	O	Serial communication clock to EEPROM IC161.
I2C DATA	MA-370 IC160⑫	I/O	Serial communication data to video and audio microprocessor.
I2C CLOCK	MA-370 IC160⑪	O	Serial communication clock to video and audio microprocessor.

5-5. SYSTEM CONTROL – AUDIO BLOCK INTERFACE (MA-370 BOARD IC160)

Signal	Pin No.	I/O	STOP/ FF/ REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	REC	REC • PAUSE
A MUTE	MA-370 IC160㊸	O	L	L	L	L	L	H

5-6. SERVO/SYSTEM CONTROL MICROPROCESSOR PIN FUNCTION (MA-370 BOARD IC160)

Pin No.	Pin Name	I/O	Function
1	DEST	I	Destination control input
2	N.C	—	NC
3	TU AFT	I	Tuner analog AFT input (Not used)
4	FUNC KEY2	I	Key input
5	FUNC KEY1	I	Key input
6	S SENS	I	Tape end sensor input
7	T SENS	I	Tape top sensor input
8	V RF ENV	I	Video playback signal envelope input
9	AF ANV	I	Hi-Fi audio playback signal envelope input (Not used)
10	CBC ON	O	Cable box control signal output (Not used)
11	KKP+	I	ETR pulse signal input (Not used)
12	KKP–	I	ETR pulse signal input (Not used)
13	QVD	O	Quasi VD pulse output
14	REMOCON	I	Remote sircs signal input
15	C ROT	O	Head AZ signal output
16	HA SWP	O	SP/EP changed head signal
17	ENV SW	I	SP/EP head output level detection signal
18	RF SWP	O	VIDEO RF switching pulse output.
19	AF SWP	O	AF switching pulse output. (Not used)
20	END LED	O	END sensor LED output
21	ANT SEL	O	TV/VTR RF modulator control output (Not used)
22	AF REC P	O	Hi-Fi record control pulse output. (Not used)
23	N.C	—	NC
24	CAP RVS	O	Capstan reverse control
25	N.C	—	NC
26	MODE4	I	Mechanism section CAM encoder input (data4)
27	MODE3	I	Mechanism section CAM encoder input (data3)
28	MODE2	I	Mechanism section CAM encoder input (data2)
29	MODE1	I	Mechanism section CAM encoder input (data1)
30	REC PRF	I	Erasing protection tab, cassette IN detection input
31	I2C CLK EEP	I/O	IIC CLOCK line (EEPROM)
32	I2C DATA EEP	I/O	IIC DATA line (EEPROM)
33	CAM	O	Cam motor control signal output
34	RESET	I	System reset input
35	32kHz (in)	I	Sub clock 32kHz (Not used)
36	32kHz (out)	O	Sub clock 32kHz (Not used)
37	Vcc	I	5V
38	4fsc (in)	I	Main clock input
39	4fsc (out)	O	Main clock output
40	Vss	—	Ground
41	ARC CLK	O	Rearityregenarator (ARC) control clock signal (Not used)
42	ARC DATA	O	Rearityregenarator (ARC) control data signal (Not used)
43	CLK SEL	I	CLOCK select “L” Sub clock, “H” main and sub clock. (Fixed to “H”)
44	OSC IN	I	OSD clock input
45	OSC OUT	O	OSD clock output
46	NUB	—	Ground
47	LPF	I/O	fsc filter
48	$\overline{SP}$	O	“L” output when SP mode. (Not used)
49	OSD GND	—	Ground
50	OSD V IN	I	OSD Video signal input.

Pin No.	Pin Name	I/O	Function
51	WHITE LEVEL	I	White level signal input (Fixed to ground)
52	OSD V OUT	O	OSD Video signal output
53	OSD Vcc	—	SW 5V (OSD block)
54	HLF	I/O	External low-pass filter for slicer/AFC is connected to this terminal
55	V HOLD	I/O	External capacitor for slicer is connected to this terminal
56	C VIDEO IN	I	Control video signal input (osd, servo)
57	NUA	—	D Ground
58	N.C	I	NC
59	PLL CLK	O	Kids sound PLL clock output
60	PLL DATA	O	Kids sound PLL data output
61	PLL ENABLE	O	Kids sound enable output
62	TA MUTE	O	Tuner audio mute output (Not used)
63	A MUTE	O	AUDIO mute output
64	P CONT M12	O	Motor 12V control output
65	P CONT SW12	O	SW 12V control output
66	$\overline{FLD\ CS}$	O	FLD drive chip select signal output (Not used)
67	$\overline{V\text{-}SET\ CS}$	O	V-set micon chip select signal output (Not used)
68	S OUT0	O	Serial communication signal (Not used)
69	S IN 0	I	Serial communication signal (Not used)
70	S CLK 0	O	Serial communication signal (Not used)
71	I2C CLK	I/O	IIC clock signal (VIDEO)
72	I2C DATA	I/O	IIC data signal (VIDEO)
73	CBC SIRCS OUT	O	Cable mouse sircs signal output (Not used)
74	CLK OUT	—	NC
75	NICOLE	O	Timing signal output (Not used)
76	CAP ERR	O	Capstan error D/A output
77	DRUM ERR	O	Drum error D/A output
78	P FAIL	I	Power fail detection input
79	S REEL	I	Supply reel sensor input
80	T REEL	I	Take up reel sensor input
81	DMS+	I	DMS control input (Not used)
82	DMS–	I	DMS control input (Not used)
83	$\overline{MAIN}$/SAP	O	POWER LED control signal output
84	F MONO	O	Tuner audio normal select (Not used)
85	$\overline{STEREO}$	I	Tuner Stereo detection “L” when Stereo mode. (Fixed to “H”)
86	$\overline{SAP}$	I	Tuner SAP detection “L” when SAP mode. (Fixed to “H”)
87	CAP FG	I	Capstan FG signal input
88	AMP Vss	—	Ground
89	DRUM FG	I	Drum FG input.
90	DRUM PG	I	Drum PG input.
91	AMP Vref OUT	O	Analog AMP reference voltage output
92	AMP Vref IN	I	Analog AMP reference voltage input
93	RC CHECK	I	Check input (Fixed to “H”)
94	CTL–IN	I/O	Control head signal IN/OUT
95	CTL+IN	I/O	Control head signal IN/OUT
96	AMP C	I	External capacitor for AMP connected to this terminal
97	CTL AMP OUT	O	Control AMP signal output (For check)
98	AMP Vcc	—	D5V
99	A Vcc	—	D5V
100	$\overline{V\text{-}SET\ RESET}$	O	NC

SECTION 6
ADJUSTMENTS

During the adjustment, see the Parts Arrangement Diagram for Adjustments on Page 6-4.

6-1. MECHANICAL ADJUSTMENTS

Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT VI.

6-2. ELECTRICAL ADJUSTMENTS

2-1. PRE-ADJUSTMENT PREPARATIONS

Necessary items and indications for total adjustment of electric circuit of this machine will be described in this chapter.

2-1-1. Instruments to be Used

1) Color TV
2) Oscilloscope 1 or 2 phenomena, band more than 30 MHz, delay mode, as provided.
3) NTSC pattern generator
4) Digital voltmeter
5) Remote commander
   RMT-V266A (1-418-694-11) or
   RMT-V266B (1-418-695-11)
6) Audio level meter
7) Audio generator
8) Attenuator
9) Alignment tape
   Part Code: 8-192-605-32 KRV-51N2

2-1-2. Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

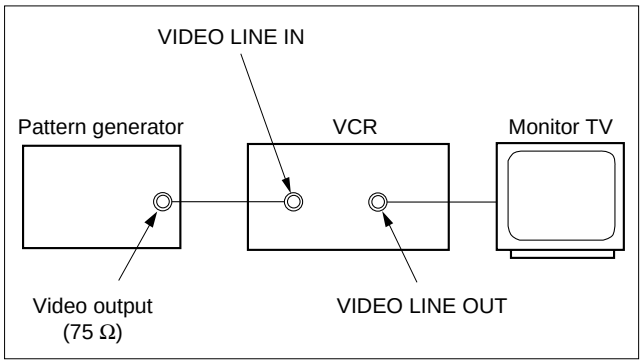


Fig. 6-2-1

2-1-3. Set-up of Adjustment

In this adjustment, NTSC pattern generator is connected with LINE input signal terminal. When check to tuner, connected AERIAL terminal. Check that the amplitudes of video signal SYNC signal, of picture portions, and of burst signals are flat at approximately 0.3, 0.7 and 0.3 V, respectively, and that the level ratio of the burst signal and "red" signal are 0.30: 0.66. Fig. 6-2-2. shows video signals (color bars) used in adjusting the video section.

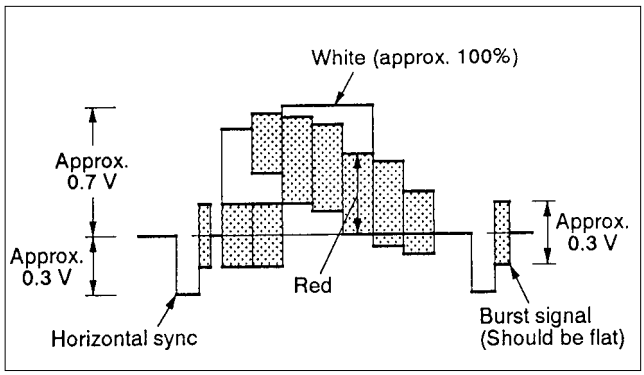


Fig. 6-2-2

2-1-4. Alignment Tapes
[Alignment Tape (KRV-51N2)]

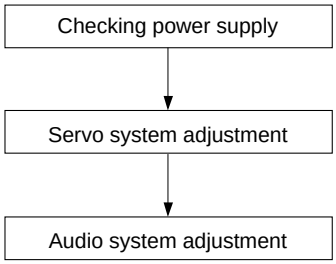
	Mode	Time	Video signal	Audio signal (HiFi/Normal)
1	SP	Seven minutes	Color bar	400 Hz
2	SP	Three minutes	Monoscope	
3	EP	Seven minutes	Color bar	
4	EP	Three minutes	Monoscope	

2-1-5. Specified I/O Level and Impedance
Input/output terminal

Video inputs	LINE IN	: phono jack
	Input signal	: 1 Vp-p, 75 Ω, unbalanced, sync negative
Audio inputs	LINE IN	: phono jack
	Input level	: 327 mVrms
	Input impedance: more than 47 kΩ	
Video outputs	LINE OUT	: phono jack
	Output signal	: 1 Vp-p, 75 Ω, unbalanced, sync negative
Audio outputs	LINE OUT	: phono jacks
	Standard output : 327 mVrms	
	Load impedance : 47 kΩ	
	Output impedance : less than 10 kΩ	

2-1-6. Adjusting Sequence

Make the electrical adjustment in the following sequence.



2-2. POWER SUPPLY ADJUSTMENT

2-2-1. Power Supply Check (MA-370 Board)

Mode	STANDBY
Measuring Instrument	Digital voltmeter
D +6 V check	
Measurement Point	Corrector of Q607
Specified Value	5.56 to 6.25 V

Mode	E-E
Measuring Instrument	Digital voltmeter
SW +12 V check	
Measurement Point	Pin ② of IC601
Specified Value	11.7 to 12.3 V
SW +5 V check	
Measurement Point	Emitter of Q607
Specified Value	4.8 to 5.4 V
MTR 12 V check	
Measurement Point	Corrector of Q605
Specified Value	12.5 to 14.5 V

Checking Method:

1) Confirm that each voltage meets its specified value.

2-3. SERVO SYSTEM ADJUSTMENT

2-3-1. RF Switching Position Adjustment (MA-370 Board)

Purpose:

Adjust the interval between A ch and B ch of tape playback output.
Improve the interchangeability with other tapes and sets.
When it is out of order, the interval appears on the screen, the screen is disturbed.

Mode	PB
Signal	Alignment tape SP mode color bar
Measurement Point	CH1: VIDEO LINE OUT CH2: Pin ③ of CN270 (RF SWP)
Measuring Instrument	Oscilloscope
Adjusting Element	Remote commander (Note)
Specified Value	6.5 ± 0.5 H (410 ± 32 µsec)

Note: RMT-V266A (1-418-694-11) or
RMT-V266B (1-418-695-11)

Adjusting Method:

1) Connect MA-370 board JS401 to the GND for about 1 second to activate the RF switching position adjustment mode.
2) Check that the Power LED flash on and off.
3) Using the channel + and – buttons on the remote commander, adjust to 6.5 ± 0.5 H.
4) Press the pause button.

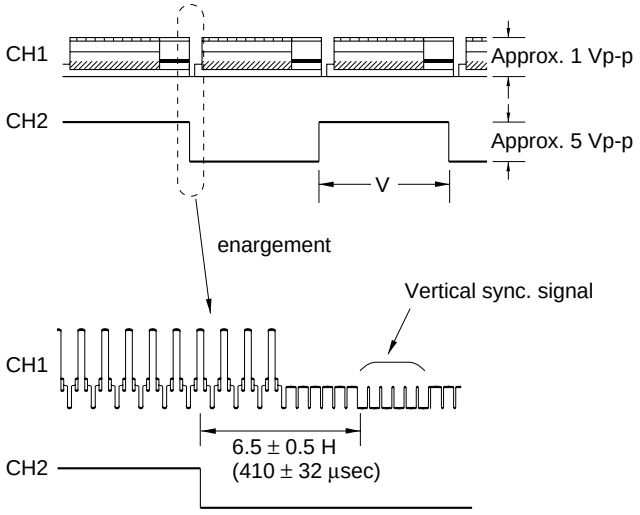


Fig. 6-2-3.

2-4. AUDIO SYSTEM ADJUSTMENTS

[Connection]

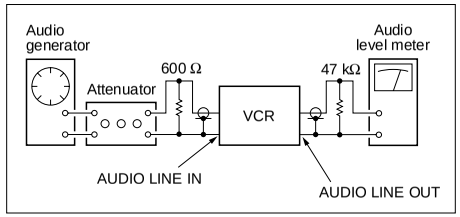


Fig. 6-2-4.

2-4-1. Normal Audio System Adjustment

- Make adjustment in the SP mode, unless otherwise specified. Use a normal VHS cassette for an adjustment tape.

[Adjustment Sequence]

1. **ACE Head Adjustment**
2. **E-E Output Level Check**
3. **Frequency Response Check**

1. ACE Head Adjustment

Refer to the service manual of VHS MECHANICAL ADJUSTMENT VI.

2. E-E Output Level Check

Purpose:

Confirm that the output level against the reference input is within the specification.

Mode	E-E
Signal	400 Hz, –7.5 dBs
Measurement point	Audio output terminal
Measurement equipment	Audio level meter
Specified value	–7.5 ± 2 dBs

Confirmation Method:

1) Input a signal of 400 Hz, –7.5 dBs to Audio Line Input.
2) Confirm that the audio output level is –7.5 ± 2 dBs.

3. Frequency Response Check

Purpose:

Confirm that the frequency characteristic is within the specification.

Mode	REC and PB (SP mode)
Signal	400 Hz, –17.5 dBs 7 kHz, –17.5 dBs
Measurement point	Audio output terminal
Measurement equipment	Audio level meter
Specified value	0 ± 3 dB

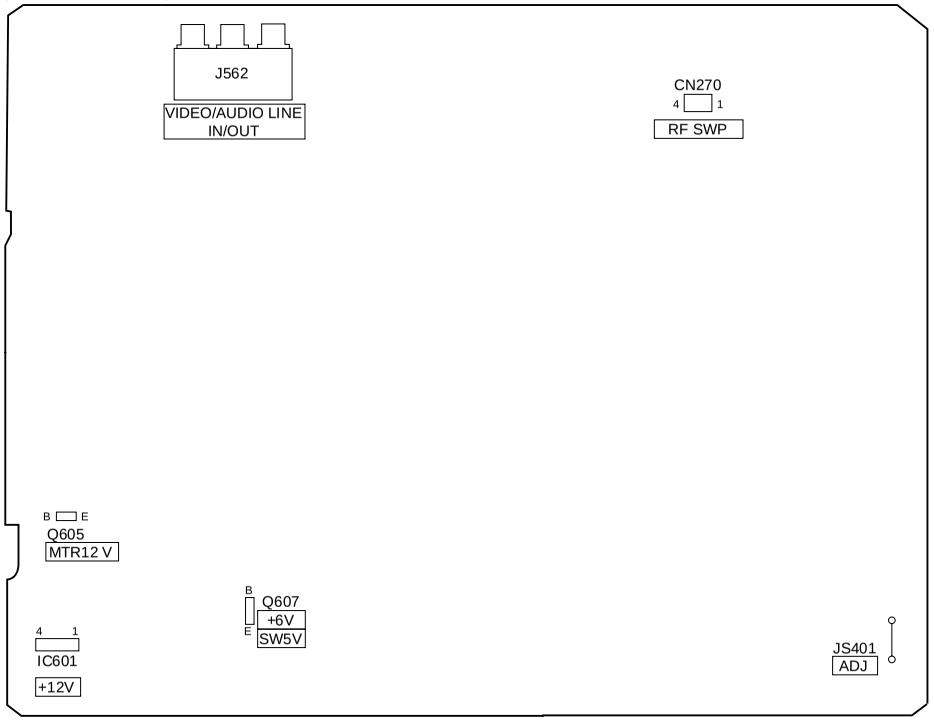
Note: Tape path adjustment must have been completed.

Confirmation Method:

1) Supply a signal of 400 Hz, –17.5 dBs to Audio Line Input.
2) Connect the audio level meter to the Audio Line Output.
3) Adjust the attenuator so that the audio level meter will indicate –17.5 dBs.
4) Make recording in the SP mode.
5) Set an audio line input signal to 7 kHz and make recording.
6) Playback a recorded portion, and measure output levels at 400 Hz and 7 kHz.
7) Confirm that the 7 kHz playback output level within a range of the 400 Hz playback output level 0 ± 3 dB.

2-5. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS

MA-370 BOARD
(CONDUCTOR SIDE)



SECTION 7
REPAIR PARTS LIST

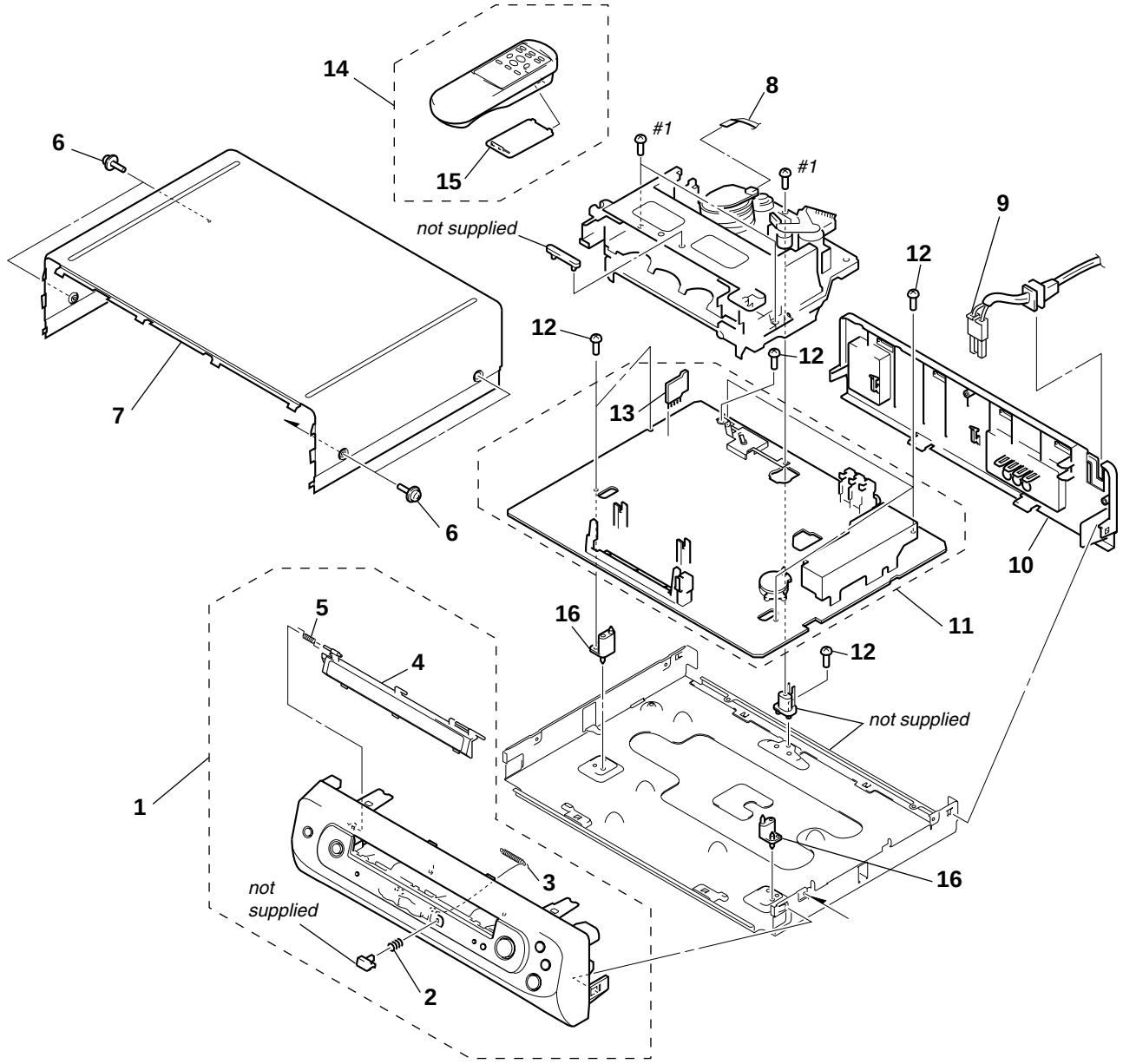
7-1. EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

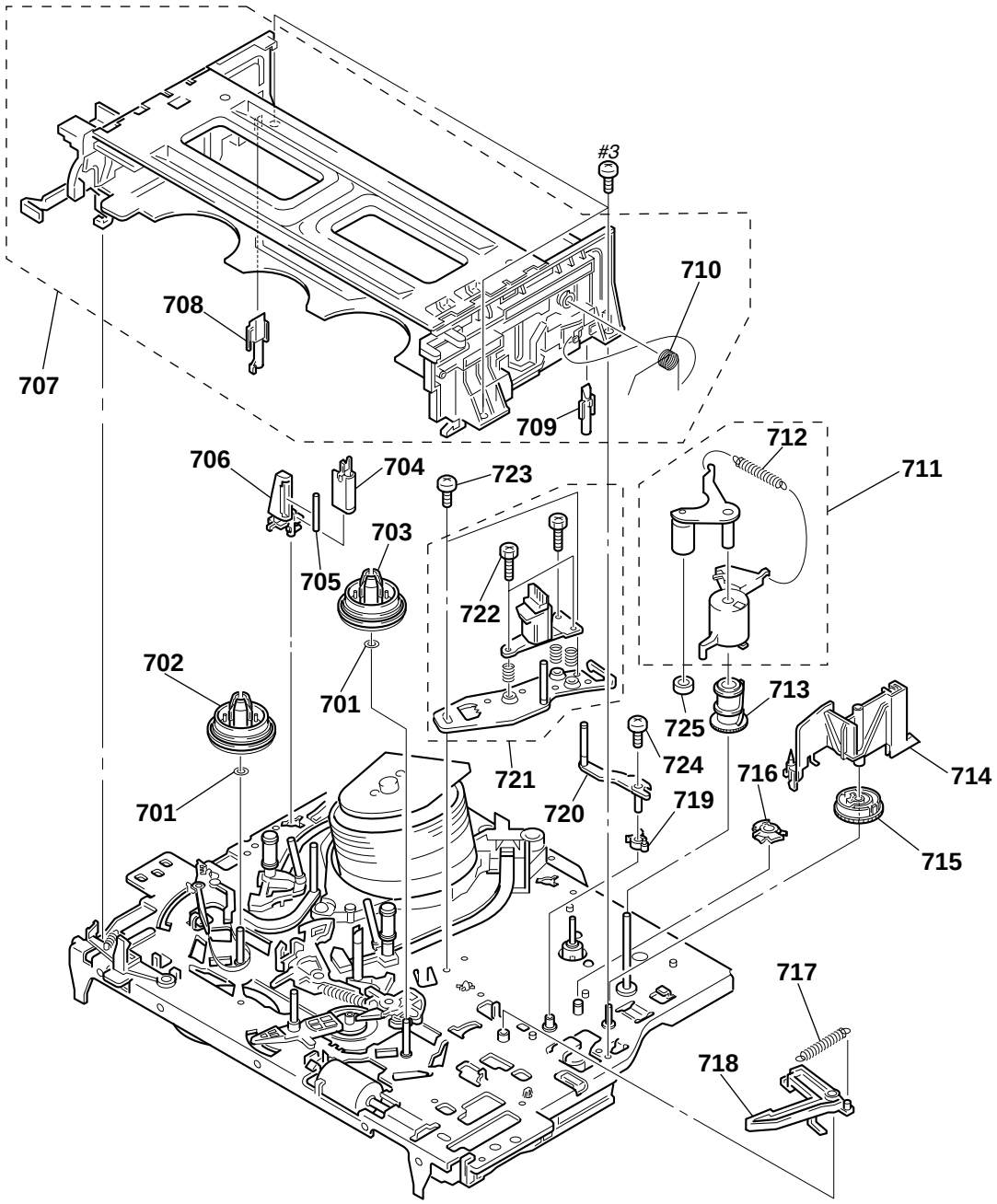
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

7-1-1. FRONT PANEL AND CHASSIS ASSEMBLY



Ref. No.	Part No.	Description	Remark
1	X-3950-706-1	PANEL ASSY, FRONT	
2	3-061-857-01	SPRING, RELEASE	
3	3-061-858-01	SPRING, RETURN	
4	3-061-839-01	DOOR, CASSETTE	
5	3-953-432-01	SPRING (GE), FL	
6	3-710-901-61	SCREW, TAPPING	
7	3-061-876-11	CASE, UPPER	
8	1-791-857-11	CABLE, FLAT (FFM-34)	
⚠9	1-777-852-12	CORD, POWER (Mexican)	
⚠9	1-790-293-21	CORD, POWER (US, Canadian)	
10	3-051-393-11	PANEL (M), REAR	
* 11	A-6713-725-A	MA-370 BOARD, COMPLETE	
12	3-970-608-21	SUMITITE (B3), +BV	
* 13	A-6794-777-A	QP-1 BOARD, COMPLETE	
14	1-476-042-11	REMOTE COMMANDER (RMT-V301)	
15	3-709-597-01	COVER, BATTERY (for RMT-V301)	
* 16	3-959-383-01	BASE (R), MD	

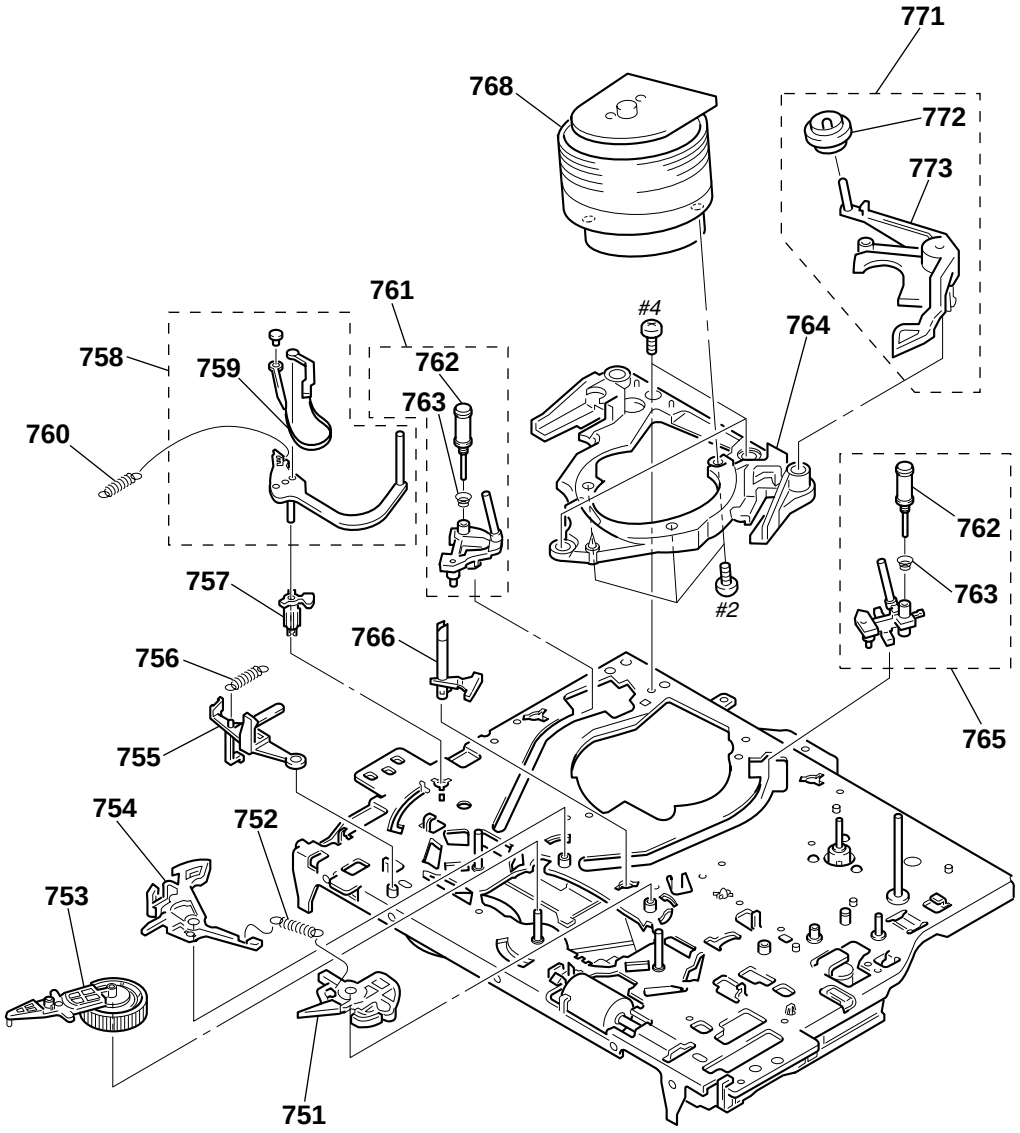
7-1-2. MECHANISM CHASSIS ASSEMBLY (1)



Ref. No.	Part No.	Description	Remark
701	3-977-509-01	WASHER, THRUST	
702	3-977-507-01	TABLE, REEL (S) (GRAY)	
703	3-977-508-01	TABLE, REEL (T) (BLACK)	
704	1-500-144-11	HEAD, FE	
705	3-977-495-01	SHAFT TG2	
706	3-977-494-01	HOLDER, FEH	
707	A-6759-619-B	FL COMPLETE ASSY	
708	3-977-535-01	PLATE, LUMINOUS (END SENSOR)	
709	3-977-536-01	PLATE, LUMINOUS (TOP SENSOR)	
710	3-970-471-01	SPRING (DECK OPEN), TORSION	
711	A-6759-863-B	PRESS BLOCK ASSY, PINCH	
712	3-958-455-01	SPRING (PINCH), TENSION	
713	3-977-447-01	GEAR, ELEVATOR	

Ref. No.	Part No.	Description	Remark
714	3-977-514-01	OPENER, LID	
715	3-977-441-03	GEAR, PINCH PRESSING	
716	3-977-445-02	GEAR, TG8 ARM DRIVING	
717	3-977-465-01	SPRING, EXTENSION (RVS BRAKE)	
718	X-3947-582-1	ARM ASSY, RVS BRAKE	
719	3-977-446-01	GEAR, TG8 ARM	
720	X-3947-590-1	TG8 ASSY	
721	A-6759-620-A	HEAD BLOCK ASSY, ACE (TDK)	
722	3-974-556-11	+HEXA TT 2.6X9 (TAPER)	
723	3-979-508-01	SCREW +HEXA TP SW 3X8	
724	3-719-381-01	SCREW (M2X4)	
725	3-736-045-01	BEARING (NO FLANG), BALL	

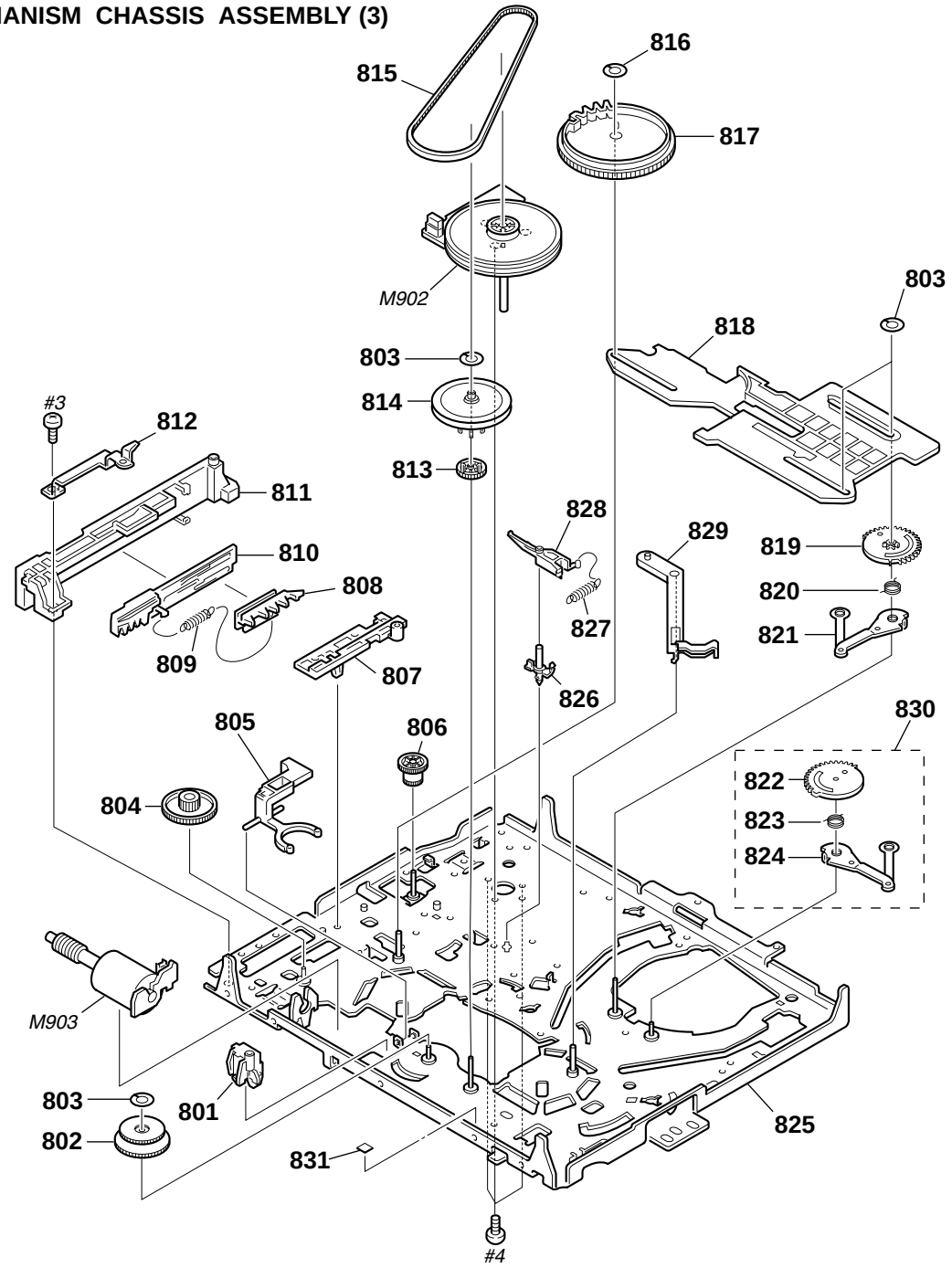
7-1-3. MECHANISM CHASSIS ASSEMBLY (2)



Ref. No.	Part No.	Description	Remark
751	X-3947-581-4	BRAKE ASSY, MAIN (T)	
752	3-977-462-01	SPRING, EXTENTION. (MAIN BRAKE)	
753	X-3947-573-1	ARM ASSY, PENDULUM	
754	X-3947-580-5	BRAKE ASSY, MAIN (S)	
755	3-977-513-02	LEVER, REC. PROOF	
756	3-976-767-01	SPRING, TENS. (REC. PROOF)	
757	3-977-487-01	BOSS, TG1 FULCRUM	
758	X-3947-587-1	TG1 ASSY	
759	X-3947-589-1	BAND ASSY, TG1	
760	3-977-488-01	SPRING (POWER TENSION)	

Ref. No.	Part No.	Description	Remark
761	A-6750-324-A	SHUTTLE (S) BLOCK ASSY	
762	X-3944-378-1	ROLLER ASSY, GUIDE	
763	3-965-178-01	SPRING	
764	3-969-632-04	BASE, DRUM	
765	A-6750-328-G	SHUTTLE (T) BLOCK ASSY	
766	3-977-501-01	PLATE, LUMINOUS	
768	8-839-049-53	DRUM ASSY DZH-0A2A/Z-RP	
771	A-6746-074-G	ROLLER BLOCK ASSY, HC	
772	X-3947-255-1	ROLLER ASSY, HC	
773	3-975-724-07	ARM, HC	

7-1-4. MECHANISM CHASSIS ASSEMBLY (3)



Ref. No.	Part No.	Description	Remark
801	3-977-437-01	RETAINER, CAM MOTOR	
802	X-3947-584-1	ASSY, REEL DIRECT	
803	3-977-443-01	WASHER, STOPPER	
804	3-977-438-01	WORM - WHEEL	
805	3-977-506-01	ARM, LIMITTER SELECTION	
806	3-977-444-01	GEAR, PINCH TRANSMISSION	
807	3-977-515-01	GUIDE, FL SLIDER	
808	3-977-517-01	PLATE, SLIDE, FL	
809	3-977-519-01	SPRING, TENS. (LIMIT, FL)	
810	3-977-518-02	PLATE, LIMITTER, FL	
811	3-977-516-01	HOLDER, FL SLIDER	
812	3-977-877-01	PLATE, RETAINER	
813	3-977-504-01	GEAR, CLUTCH	
814	X-3947-585-1	GEAR ASSY PULLEY	
815	3-977-510-01	BELT, RUBBER	
816	3-056-824-01	WASHER, STOPPER	
817	3-977-439-01	GEAR, CAM	

Ref. No.	Part No.	Description	Remark
818	3-977-442-03	SLIDER	
819	3-977-455-01	GEAR, LOADING (T)	
820	3-977-456-03	SPRING, TORSION (LOAD T)	
821	X-3947-579-1	LEVER ASSY, LOADING (T)	
822	3-977-451-01	GEAR, LOADING (S)	
823	3-977-452-01	SPRING, TORSION (LOAD S)	
824	X-3947-578-1	LEVER ASSY, LOADING (S)	
825	X-3947-576-2	CHASSIS ASSY, MECHANICAL	
826	3-977-468-01	SHAFT, CAPSTAN BRAKE	
827	3-977-467-02	SPRING, CAP BRAKE	
828	X-3947-583-1	BRAKE ASSY, CAPSTAN	
829	3-977-489-01	ARM, TG1 DRIVING	
830	A-6759-616-A	GEAR BLOCK ASSY, LOADING (S)	
831	3-989-917-01	SPACER (REC PROOF)	
M902	1-698-971-11	MOTOR, DC (CAPSTAN)	
M903	X-3947-577-1	MOTOR ASSY, CAM	

7-2. ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-6713-725-A	MA-370 BOARD, COMPLETE			
		**********			
			(Ref. No. 1,000 Series)		
*	3-951-893-01	HEAT SINK			
	3-960-273-11	SPACER, TOP END			
*	3-960-274-01	SPACER, LED			
	3-970-608-21	SUMITITE (B3), +BV			
		< CAPACITOR >			
C101	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C102	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C103	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C104	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C105	1-128-057-11	ELECT	330uF	20%	6.3V
C106	1-124-589-11	ELECT	47uF	20%	16V
C107	1-127-573-91	CERAMIC CHIP	1uF	10%	16V
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C109	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C111	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C115	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C116	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C140	1-124-584-00	ELECT	100uF	20%	10V
C141	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C142	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C143	1-126-965-11	ELECT	22uF	20%	50V
C144	1-126-965-11	ELECT	22uF	20%	50V
C145	1-126-935-11	ELECT	470uF	20%	6.3V
C146	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C160	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C161	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C162	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C163	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C164	1-216-295-00	METAL CHIP	0	5%	1/10W
C166	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C167	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C168	1-124-584-00	ELECT	100uF	20%	10V
C169	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C170	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C172	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C173	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C176	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C187	1-127-573-91	CERAMIC CHIP	1uF	10%	16V
C190	1-124-589-11	ELECT	47uF	20%	16V
C201	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C202	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C204	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C205	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C206	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C207	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C208	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C209	1-124-589-11	ELECT	47uF	20%	16V
C210	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C211	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C213	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C214	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C215	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C216	1-126-960-11	ELECT	1uF	20%	50V
C217	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C218	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C220	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C221	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C222	1-126-964-11	ELECT	10uF	20%	50V
C223	1-126-965-11	ELECT	22uF	20%	50V
C225	1-126-960-11	ELECT	1uF	20%	50V
C226	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C227	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C228	1-124-589-11	ELECT	47uF	20%	16V
C230	1-164-159-21	CERAMIC	0.1uF		50V
C231	1-124-589-11	ELECT	47uF	20%	16V
C232	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C233	1-124-261-00	ELECT	10uF	20%	50V
C234	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C235	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C236	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C237	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C238	1-124-589-11	ELECT	47uF	20%	16V
C239	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C240	1-124-589-11	ELECT	47uF	20%	16V
C241	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C242	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C243	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C244	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C245	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C246	1-164-232-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C247	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C248	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C249	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C250	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C251	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C253	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C267	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C271	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C272	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C275	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C276	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C278	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C279	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C280	1-124-584-00	ELECT	100uF	20%	10V
C281	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C282	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C283	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C284	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C285	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C286	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C350	1-126-960-11	ELECT	1uF	20%	50V
C352	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C354	1-124-261-00	ELECT	10uF	20%	50V
C355	1-126-960-11	ELECT	1uF	20%	50V
C356	1-126-966-11	ELECT	33uF	20%	16V
C357	1-126-963-11	ELECT	4.7uF	20%	50V
C358	1-126-960-11	ELECT	1uF	20%	50V
C359	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C360	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C362	1-124-589-11	ELECT	47uF	20%	16V
C363	1-126-963-11	ELECT	4.7uF	20%	50V
C364	1-126-964-11	ELECT	10uF	20%	50V
C365	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C366	1-126-160-11	ELECT	1uF	20%	50V
C368	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C369	1-126-163-11	ELECT	4.7uF	20%	50V
C371	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C380	1-137-374-11	MYLAR	0.047uF	5%	50V
C381	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C382	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C383	1-124-589-11	ELECT	47uF	20%	16V
C405	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C406	1-124-584-00	ELECT	100uF	20%	10V
C427	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C500	1-163-098-00	CERAMIC CHIP	16PF	5%	50V
C501	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C502	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C503	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C504	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C505	1-162-199-31	CERAMIC	10PF	5%	50V
C506	1-124-584-00	ELECT	100uF	20%	10V
C507	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C508	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C509	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C510	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C511	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C512	1-124-584-00	ELECT	100uF	20%	10V
C513	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C514	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C561	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C562	1-104-664-11	ELECT	47uF	20%	16V
C563	1-126-935-11	ELECT	470uF	20%	6.3V
⚠C600	1-104-705-11	MYLAR	0.1uF	20%	250V
⚠C601	1-113-920-11	CERAMIC	0.0022uF	20%	250V
⚠C602	1-119-886-51	CERAMIC	470PF	10%	250V
⚠C603	1-119-911-51	CERAMIC	470PF	10%	125V
⚠C604	1-119-912-51	CERAMIC	1000PF	20%	125V
C605	1-135-638-41	ELECT	82uF	20%	200V
C606	1-107-905-11	ELECT	4.7uF	20%	50V
C607	1-136-196-11	MYLAR	0.033uF	10%	400V
C608	1-162-558-11	CERAMIC	100PF	10%	2KV
C610	1-115-322-91	MYLAR	0.047uF	5%	50V
C611	1-115-322-91	MYLAR	0.047uF	5%	50V
C612	1-126-160-11	ELECT	1uF	20%	50V
C613	1-131-975-21	ELECT	1200uF	20%	10V
C614	1-131-976-21	ELECT	820uF	20%	25V
C616	1-126-941-11	ELECT	470uF	20%	25V
C617	1-126-935-11	ELECT	470uF	20%	16V
C619	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C621	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C622	1-128-131-11	ELECT	22uF	20%	50V
C623	1-124-589-11	ELECT	47uF	20%	16V
C624	1-124-589-11	ELECT	47uF	20%	16V
C625	1-124-589-11	ELECT	47uF	20%	16V
C626	1-124-234-00	ELECT	22uF	20%	16V
C629	1-124-234-00	ELECT	22uF	20%	16V
C638	1-126-925-11	ELECT	470uF	20%	10V
C639	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C733	1-126-960-11	ELECT	1uF	20%	50V

< CONNECTOR >

CN101	1-766-978-31	CONNECTOR, FFC/FPC 5P	
CN102	1-779-723-11	CONNECTOR, BOARD TO BOARD 9P	
* CN103	1-766-716-11	CONNECTOR, BOARD TO BOARD 3P	
CN104	1-506-469-11	PIN, CONNECTOR 4P	
CN161	1-506-468-11	PIN, CONNECTOR 3P	
CN260	1-784-485-11	CONNECTOR, FFC/FPC 6P	
* CN270	1-560-892-00	PIN, CONNECTOR 4P	
CN350	1-506-469-11	PIN, CONNECTOR 4P	
CN351	1-506-468-11	PIN, CONNECTOR 3P	
* CN600	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P	

< DIODE >

D103	8-719-048-26	DIODE	GL528V1 (T/S LED)
D109	8-719-200-82	DIODE	MPG06D-6052PKG3
D161	8-719-200-82	DIODE	MPG06D-6052PKG3
D162	8-719-200-82	DIODE	MPG06D-6052PKG3
D351	8-719-911-19	DIODE	1SS119-25TD
D352	8-719-911-19	DIODE	1SS119-25TD
D401	8-719-070-74	DIODE	SLR-342MCT32 (POWER)
D561	8-719-110-08	DIODE	RD8.2ES-T1B
D600	8-719-051-93	DIODE	DF06M-6031
D601	8-719-054-32	DIODE	ERA15-06TP3
D602	8-719-058-91	DIODE	AG01A-V0
D603	8-719-200-82	DIODE	MPG06D-6052PKG3
D604	8-719-109-62	DIODE	RD3.0ES-T1B1

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Ref. No.	Part No.	Description			Remark
D605	8-719-911-19	DIODE 1SS119-25TD			
D607	8-719-022-97	DIODE D2S4MF			
D608	8-719-073-18	DIODE S3L20UF34			
D610	8-719-160-64	DIODE RD16F-T8B1			
D611	8-719-911-19	DIODE 1SS119-25TD			
D612	8-719-109-85	DIODE RD5.1ES-T1B2			
D618	8-719-911-19	DIODE 1SS119-25TD			
D619	8-719-313-17	DIODE AU02A-V0			
D982	1-249-406-11	CARBON	120	5%	1/4W
		< GROUND TERMINAL >			
ET600	1-537-770-21	TERMINAL BOARD, GROUND			
ET601	1-537-770-21	TERMINAL BOARD, GROUND			
		< FUSE >			
⚠F600	1-532-743-11	FUSE, GLASS CYLINDRICAL (DIA.5) (2A/125V)			
		< FERRITE BEAD >			
FB101	1-216-295-00	METAL CHIP	0	5%	1/10W
FB601	1-410-858-21	INDUCTOR	0uH		
		< FUSE HOLDER >			
FH600	1-533-223-11	HOLDER, FUSE			
FH601	1-533-223-11	HOLDER, FUSE			
		< IC >			
IC101	8-759-645-07	IC LB1943N			
IC160	8-759-672-01	IC M37760M8H109GP			
IC161	8-759-575-70	IC M24C02-WMN6T			
IC162	8-759-248-87	IC MM1256XF-BE			
IC201	8-759-599-15	IC LA71052M-MPB			
IC260	8-759-564-36	IC LA70011			
IC350	8-759-499-30	IC BA7755AF-E2			
IC403	8-749-015-48	IC RPM6940			
IC601	8-759-438-18	IC PQ12RD08			
⚠IC602	8-759-321-95	IC HA17431PA-TZ			
		< JACK >			
J562	1-779-012-21	JACK, PIN 5P (LINE IN/OUT)			
		< JUMPER RESISTOR >			
JR001	1-216-295-00	METAL CHIP	0	5%	1/10W
JR002	1-216-296-00	METAL CHIP	0	5%	1/8W
JR003	1-216-296-00	METAL CHIP	0	5%	1/8W
JR005	1-216-296-00	METAL CHIP	0	5%	1/8W
JR007	1-216-296-00	METAL CHIP	0	5%	1/8W
JR008	1-216-296-00	METAL CHIP	0	5%	1/8W
JR009	1-216-296-00	METAL CHIP	0	5%	1/8W
JR010	1-216-295-00	METAL CHIP	0	5%	1/10W
JR011	1-216-296-00	METAL CHIP	0	5%	1/8W
JR012	1-216-296-00	METAL CHIP	0	5%	1/8W
JR013	1-216-295-00	METAL CHIP	0	5%	1/10W
JR014	1-216-295-00	METAL CHIP	0	5%	1/10W
JR015	1-216-295-00	METAL CHIP	0	5%	1/10W
JR018	1-216-295-00	METAL CHIP	0	5%	1/10W
JR019	1-216-295-00	METAL CHIP	0	5%	1/10W

Ref. No.	Part No.	Description			Remark
JR020	1-216-295-00	METAL CHIP	0	5%	1/10W
JR021	1-216-295-00	METAL CHIP	0	5%	1/10W
JR022	1-216-295-00	METAL CHIP	0	5%	1/10W
JR023	1-216-295-00	METAL CHIP	0	5%	1/10W
JR024	1-216-296-00	METAL CHIP	0	5%	1/8W
JR025	1-216-296-00	METAL CHIP	0	5%	1/8W
JR026	1-216-296-00	METAL CHIP	0	5%	1/8W
JR028	1-216-295-00	METAL CHIP	0	5%	1/10W
JR029	1-216-295-00	METAL CHIP	0	5%	1/10W
JR030	1-216-295-00	METAL CHIP	0	5%	1/10W
JR031	1-216-296-00	METAL CHIP	0	5%	1/8W
JR032	1-216-296-00	METAL CHIP	0	5%	1/8W
JR033	1-216-296-00	METAL CHIP	0	5%	1/8W
JR034	1-216-295-00	METAL CHIP	0	5%	1/10W
JR036	1-216-295-00	METAL CHIP	0	5%	1/10W
JR037	1-216-296-00	METAL CHIP	0	5%	1/8W
JR038	1-216-295-00	METAL CHIP	0	5%	1/10W
JR039	1-216-296-00	METAL CHIP	0	5%	1/8W
JR040	1-216-295-00	METAL CHIP	0	5%	1/10W
JR041	1-216-296-00	METAL CHIP	0	5%	1/8W
JR043	1-216-295-00	METAL CHIP	0	5%	1/10W
JR044	1-216-295-00	METAL CHIP	0	5%	1/10W
JR045	1-216-295-00	METAL CHIP	0	5%	1/10W
JR046	1-216-295-00	METAL CHIP	0	5%	1/10W
JR047	1-216-295-00	METAL CHIP	0	5%	1/10W
JR048	1-216-296-00	METAL CHIP	0	5%	1/8W
JR049	1-216-296-00	METAL CHIP	0	5%	1/8W
JR050	1-216-296-00	METAL CHIP	0	5%	1/8W
JR051	1-216-296-00	METAL CHIP	0	5%	1/8W
JR052	1-216-295-00	METAL CHIP	0	5%	1/10W
JR053	1-216-296-00	METAL CHIP	0	5%	1/8W
JR055	1-216-296-00	METAL CHIP	0	5%	1/8W
JR056	1-216-296-00	METAL CHIP	0	5%	1/8W
JR057	1-216-295-00	METAL CHIP	0	5%	1/10W
JR058	1-216-295-00	METAL CHIP	0	5%	1/10W
JR059	1-216-295-00	METAL CHIP	0	5%	1/10W
JR060	1-216-295-00	METAL CHIP	0	5%	1/10W
JR061	1-216-296-00	METAL CHIP	0	5%	1/8W
JR062	1-216-295-00	METAL CHIP	0	5%	1/10W
JR063	1-216-296-00	METAL CHIP	0	5%	1/8W
JR064	1-216-295-00	METAL CHIP	0	5%	1/10W
JR065	1-216-296-00	METAL CHIP	0	5%	1/8W
JR066	1-216-296-00	METAL CHIP	0	5%	1/8W
JR067	1-216-295-00	METAL CHIP	0	5%	1/10W
JR068	1-216-296-00	METAL CHIP	0	5%	1/8W
JR069	1-216-296-00	METAL CHIP	0	5%	1/8W
JR072	1-216-296-00	METAL CHIP	0	5%	1/8W
JR074	1-216-295-00	METAL CHIP	0	5%	1/10W
JR075	1-216-295-00	METAL CHIP	0	5%	1/10W
JR078	1-216-295-00	METAL CHIP	0	5%	1/10W
JR079	1-216-295-00	METAL CHIP	0	5%	1/10W
JR080	1-216-295-00	METAL CHIP	0	5%	1/10W
JR081	1-216-296-00	METAL CHIP	0	5%	1/8W
JR082	1-216-295-00	METAL CHIP	0	5%	1/10W
JR083	1-216-296-00	METAL CHIP	0	5%	1/8W
JR084	1-216-296-00	METAL CHIP	0	5%	1/8W
JR085	1-216-296-00	METAL CHIP	0	5%	1/8W
JR086	1-216-295-00	METAL CHIP	0	5%	1/10W

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Ref. No.	Part No.	Description			Remark
JR099	1-216-295-00	METAL CHIP	0	5%	1/10W
JS303	1-216-295-00	METAL CHIP	0	5%	1/10W
JS363	1-216-296-00	METAL CHIP	0	5%	1/8W
JS364	1-216-296-00	METAL CHIP	0	5%	1/8W
JS450	1-216-295-00	METAL CHIP	0	5%	1/10W
JS451	1-216-295-00	METAL CHIP	0	5%	1/10W
JS503	1-216-296-00	METAL CHIP	0	5%	1/8W
JS505	1-216-295-00	METAL CHIP	0	5%	1/10W
JS506	1-216-296-00	METAL CHIP	0	5%	1/8W
JS507	1-216-295-00	METAL CHIP	0	5%	1/10W
JS508	1-216-295-00	METAL CHIP	0	5%	1/10W
JS509	1-216-295-00	METAL CHIP	0	5%	1/10W
JS512	1-216-296-00	METAL CHIP	0	5%	1/8W
JS614	1-216-295-00	METAL CHIP	0	5%	1/10W
JS616	1-216-296-00	METAL CHIP	0	5%	1/8W
JS618	1-216-295-00	METAL CHIP	0	5%	1/10W
JS622	1-216-295-00	METAL CHIP	0	5%	1/10W
JS750	1-216-296-00	METAL CHIP	0	5%	1/8W
JS981	1-249-406-11	CARBON	120	5%	1/4W
JW129	1-249-437-11	CARBON	47K	5%	1/4W
JW130	1-249-437-11	CARBON	47K	5%	1/4W
		< COIL >			
L101	1-414-930-21	INDUCTOR	2.2uH		
L161	1-414-936-21	INDUCTOR	22uH		
L162	1-414-936-21	INDUCTOR	22uH		
L163	1-414-936-21	INDUCTOR	22uH		
L201	1-414-946-21	INDUCTOR	39uH		
L202	1-414-940-21	INDUCTOR	100uH		
L203	1-414-934-21	INDUCTOR	10uH		
L204	1-414-940-21	INDUCTOR	100uH		
L205	1-414-940-21	INDUCTOR	100uH		
L206	1-414-940-21	INDUCTOR	100uH		
L207	1-414-942-21	INDUCTOR	220uH		
L270	1-414-940-21	INDUCTOR	100uH		
L380	1-414-940-21	INDUCTOR	100uH		
L500	1-414-930-21	INDUCTOR	2.2uH		
L501	1-414-940-21	INDUCTOR	100uH		
L561	1-414-940-21	INDUCTOR	100uH		
L601	1-403-588-11	INDUCTOR	22uH		
L602	1-403-588-11	INDUCTOR	22uH		
L605	1-414-142-11	INDUCTOR	1uH		
L606	1-414-142-11	INDUCTOR	1uH		
		< LINE FILTER >			
⚠LF600	1-416-929-11	FILTER, LINE			
		< PHOTO INTERRUPTER >			
PH101	8-749-015-86	PHOTO INTERRUPTER GP3S120S (S.REEL)			
PH102	8-749-015-86	PHOTO INTERRUPTER GP3S120S (T.REEL)			
⚠PH600	8-749-014-24	COUPLER, PHOTO ON3131-S (LF)			
		< IC LINK >			
⚠PS101	1-532-727-11	LINK, IC (0.25A)			
⚠PS600	1-532-841-21	LINK, IC (1.6A)			

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q101	8-729-043-84	TRANSISTOR	PT380F3 (T.SENS)		
Q102	8-729-043-84	TRANSISTOR	PT380F3 (S.SENS)		
Q103	8-729-281-53	TRANSISTOR	2SC1815GR-TPE2		
Q201	8-729-230-49	TRANSISTOR	2SC2712Y-TE85L		
Q202	8-729-230-49	TRANSISTOR	2SC2712Y-TE85L		
Q203	8-729-216-21	TRANSISTOR	2SA1162Y-TE85L		
Q350	8-729-281-53	TRANSISTOR	2SC1815GR-TPE2		
Q351	8-729-230-49	TRANSISTOR	2SC2712Y-TE85L		
Q380	8-729-821-15	TRANSISTOR	2SD1620-TD		
Q450	8-729-424-59	TRANSISTOR	UN2212-TX		
Q500	8-729-010-05	TRANSISTOR	MSB709-RT1		
Q501	8-729-010-29	TRANSISTOR	MSD601-RST1		
Q502	8-729-216-21	TRANSISTOR	2SA1162Y-TE85L		
Q561	8-729-010-05	TRANSISTOR	MSB709-RT1		
Q601	8-729-904-98	TRANSISTOR	2SC4054P		
Q602	8-729-012-31	TRANSISTOR	2SC4040-TL2-Q		
Q603	8-729-119-78	TRANSISTOR	2SC3311A-RTA		
Q604	8-729-010-29	TRANSISTOR	MSD601-RST1		
Q605	8-729-047-92	TRANSISTOR	2SB1398-Q (TA).S0		
Q607	8-729-019-01	TRANSISTOR	2SD2394-EF		
		< RESISTOR >			
R101	1-249-413-11	CARBON	470	5%	1/4W
R102	1-216-077-91	RES-CHIP	15K	5%	1/10W
R103	1-216-077-91	RES-CHIP	15K	5%	1/10W
R104	1-216-081-00	METAL CHIP	22K	5%	1/10W
R105	1-249-433-11	CARBON	22K	5%	1/4W
R106	1-249-400-11	CARBON	39	5%	1/4W
R107	1-249-400-11	CARBON	39	5%	1/4W
R109	1-216-089-00	METAL CHIP	47K	5%	1/10W
R110	1-216-089-00	METAL CHIP	47K	5%	1/10W
R111	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R112	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R115	1-216-089-00	METAL CHIP	47K	5%	1/10W
R116	1-216-089-00	METAL CHIP	47K	5%	1/10W
R117	1-216-041-00	METAL CHIP	470	5%	1/10W
R118	1-216-089-00	METAL CHIP	47K	5%	1/10W
R119	1-216-077-91	RES-CHIP	15K	5%	1/10W
R120	1-249-417-11	CARBON	1K	5%	1/4W
R121	1-216-041-00	METAL CHIP	470	5%	1/10W
R142	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R143	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R161	1-216-073-00	METAL CHIP	10K	5%	1/10W
R162	1-249-428-11	CARBON	8.2K	5%	1/4W
R166	1-216-073-00	METAL CHIP	10K	5%	1/10W
R167	1-249-431-11	CARBON	15K	5%	1/4W
R168	1-216-073-00	METAL CHIP	10K	5%	1/10W
R169	1-216-073-00	METAL CHIP	10K	5%	1/10W
R170	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R171	1-216-089-00	METAL CHIP	47K	5%	1/10W
R172	1-216-073-00	METAL CHIP	10K	5%	1/10W
R174	1-216-039-00	METAL CHIP	390	5%	1/10W
R175	1-249-413-11	CARBON	470	5%	1/4W
R176	1-249-413-11	CARBON	470	5%	1/4W
R177	1-249-413-11	CARBON	470	5%	1/4W
R178	1-216-105-91	RES-CHIP	220K	5%	1/10W
R179	1-216-113-00	METAL CHIP	470K	5%	1/10W

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Ref. No.	Part No.	Description			Remark
R188	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R189	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R190	1-249-417-11	CARBON	1K	5%	1/4W
R191	1-249-417-11	CARBON	1K	5%	1/4W
R192	1-249-417-11	CARBON	1K	5%	1/4W
R193	1-216-295-00	METAL CHIP	0	5%	1/10W
R194	1-216-073-00	METAL CHIP	10K	5%	1/10W
R201	1-216-037-00	METAL CHIP	330	5%	1/10W
R202	1-216-047-91	RES-CHIP	820	5%	1/10W
R203	1-216-037-00	METAL CHIP	330	5%	1/10W
R204	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R205	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R208	1-216-295-00	METAL CHIP	0	5%	1/10W
R209	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R210	1-216-054-00	RES-CHIP	1.6K	5%	1/10W
R211	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R212	1-216-043-91	RES-CHIP	560	5%	1/10W
R213	1-216-049-00	METAL CHIP	1K	5%	1/10W
R214	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R215	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R216	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R219	1-216-025-91	RES-CHIP	100	5%	1/10W
R220	1-216-295-00	METAL CHIP	0	5%	1/10W
R221	1-216-295-00	METAL CHIP	0	5%	1/10W
R223	1-216-045-00	METAL CHIP	680	5%	1/10W
R224	1-216-089-00	METAL CHIP	47K	5%	1/10W
R231	1-216-089-00	METAL CHIP	47K	5%	1/10W
R267	1-216-295-00	METAL CHIP	0	5%	1/10W
R270	1-216-041-00	METAL CHIP	470	5%	1/10W
R271	1-216-041-00	METAL CHIP	470	5%	1/10W
R272	1-208-788-11	METAL CHIP	1.8K	0.5%	1/10W
R274	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R276	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R277	1-216-081-00	METAL CHIP	22K	5%	1/10W
R278	1-216-081-00	METAL CHIP	22K	5%	1/10W
R279	1-216-081-00	METAL CHIP	22K	5%	1/10W
R322	1-216-295-00	METAL CHIP	0	5%	1/10W
R350	1-216-093-91	RES-CHIP	68K	5%	1/10W
R351	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R354	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R355	1-216-093-91	RES-CHIP	68K	5%	1/10W
R356	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R357	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R358	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R359	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R362	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R363	1-216-079-00	METAL CHIP	18K	5%	1/10W
R364	1-216-035-00	METAL CHIP	270	5%	1/10W
R365	1-216-109-00	METAL CHIP	330K	5%	1/10W
R366	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R367	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R368	1-216-295-00	METAL CHIP	0	5%	1/10W
R369	1-216-047-91	RES-CHIP	820	5%	1/10W
R370	1-216-075-00	METAL CHIP	12K	5%	1/10W
R371	1-216-079-00	METAL CHIP	18K	5%	1/10W
R372	1-216-043-91	RES-CHIP	560	5%	1/10W
R373	1-216-049-00	METAL CHIP	1K	5%	1/10W
R380	1-216-017-91	RES-CHIP	47	5%	1/10W
R381	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R382	1-217-671-11	METAL CHIP	1	5%	1/10W
R383	1-216-031-00	METAL CHIP	180	5%	1/10W
R401	1-216-025-91	RES-CHIP	100	5%	1/10W
R402	1-249-437-11	CARBON	47K	5%	1/4W
R408	1-216-295-00	METAL CHIP	0	5%	1/10W
R409	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R410	1-216-295-00	METAL CHIP	0	5%	1/10W
R411	1-216-295-00	METAL CHIP	0	5%	1/10W
R412	1-216-295-00	METAL CHIP	0	5%	1/10W
R413	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R415	1-216-295-00	METAL CHIP	0	5%	1/10W
R416	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R417	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R419	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R420	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R421	1-216-029-00	METAL CHIP	150	5%	1/10W
R428	1-216-037-00	METAL CHIP	330	5%	1/10W
R431	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R432	1-216-295-00	METAL CHIP	0	5%	1/10W
R440	1-216-079-00	METAL CHIP	18K	5%	1/10W
R500	1-216-049-00	METAL CHIP	1K	5%	1/10W
R502	1-216-295-00	METAL CHIP	0	5%	1/10W
R503	1-216-049-00	METAL CHIP	1K	5%	1/10W
R504	1-216-049-00	METAL CHIP	1K	5%	1/10W
R505	1-216-045-00	METAL CHIP	680	5%	1/10W
R506	1-216-033-00	METAL CHIP	220	5%	1/10W
R507	1-216-041-00	METAL CHIP	470	5%	1/10W
R508	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R509	1-216-121-91	RES-CHIP	1M	5%	1/10W
R512	1-216-295-00	METAL CHIP	0	5%	1/10W
R513	1-249-413-11	CARBON	470	5%	1/4W
R561	1-216-037-00	METAL CHIP	330	5%	1/10W
R562	1-249-407-11	CARBON	150	5%	1/4W
R563	1-249-408-11	CARBON	180	5%	1/4W
R564	1-216-021-00	METAL CHIP	68	5%	1/10W
R565	1-216-022-00	METAL CHIP	75	5%	1/10W
R600	1-219-779-51	CARBON	6.8M	10%	1/2W
R601	1-249-441-11	CARBON	100K	5%	1/4W
R602	1-249-441-11	CARBON	100K	5%	1/4W
R603	1-249-429-11	CARBON	10K	5%	1/4W
R604	1-216-451-11	METAL OXIDE	120	5%	2W
R605	1-215-416-00	METAL	620	1%	1/4W
R606	1-249-402-11	CARBON	56	5%	1/4W
R607	1-215-927-41	METAL OXIDE	47K	5%	3W
R608	1-249-401-11	CARBON	47	5%	1/4W
R609	1-249-406-11	CARBON	120	5%	1/4W
R610	1-208-789-11	METAL CHIP	2K	0.5%	1/10W
R611	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R613	1-260-091-11	CARBON	220	5%	1/2W
R615	1-249-417-11	CARBON	1K	5%	1/4W
R616	1-249-409-11	CARBON	220	5%	1/4W
R617	1-249-417-11	CARBON	1K	5%	1/4W
R618	1-260-091-11	CARBON	220	5%	1/2W
R619	1-249-413-11	CARBON	470	5%	1/4W
R620	1-249-413-11	CARBON	470	5%	1/4W
R623	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R624	1-216-430-11	METAL OXIDE	390	5%	1W
R625	1-249-429-11	CARBON	10K	5%	1/4W
R630	1-216-049-00	METAL CHIP	1K	5%	1/10W
R633	1-216-295-00	METAL CHIP	0	5%	1/10W
R637	1-249-409-11	CARBON	220	5%	1/4W

Ref. No.	Part No.	Description			Remark
⚠R641	1-219-123-11	FUSIBLE	0.47	5%	1/4W
R642	1-243-858-41	METAL OXIDE	6.8	5%	3W
R643	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R645	1-260-066-91	CARBON	1.5	5%	1/2W
R646	1-260-066-91	CARBON	1.5	5%	1/2W
R647	1-216-353-00	METAL OXIDE	2.2	5%	1W
R709	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R710	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R711	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R713	1-216-295-00	METAL CHIP	0	5%	1/10W
R731	1-216-295-00	METAL CHIP	0	5%	1/10W
R732	1-216-295-00	METAL CHIP	0	5%	1/10W
R737	1-216-295-00	METAL CHIP	0	5%	1/10W
R738	1-216-295-00	METAL CHIP	0	5%	1/10W
		< SWITCH >			
S101	1-762-108-11	SWITCH, PUSH (1 KEY) (REC PROOF)			
S102	1-771-155-11	SWITCH, ROTARY (CAM ENCODER)			
S401	1-762-196-21	SWITCH, TACT (POWER I/⏻)			
S406	1-762-196-21	SWITCH, TACT (⏏ EJECT)			
S409	1-762-196-21	SWITCH, TACT (▷ PLAY)			
S410	1-762-196-21	SWITCH, TACT (◀◀ REW)			
S412	1-762-196-21	SWITCH, TACT (■ STOP)			
S413	1-762-196-21	SWITCH, TACT (▶▶ FF)			
S423	1-771-574-21	SWITCH, TACTILE (SP/EP)			
S424	1-771-574-21	SWITCH, TACTILE (REC ●)			
S425	1-771-574-21	SWITCH, TACTILE (PLAY TIMER SET UP)			
		< TRANSFORMER >			
T380	1-433-479-11	TRANSFORMER, BIAS OSCILLATION			
⚠T600	1-433-568-11	TRANSFORMER, CONVERTER (RCC)			
		< VIBRATOR >			
X160	1-767-857-11	VIBRATOR, CRYSTAL (14.31818MHz)			
X201	1-577-380-11	VIBRATOR, CRYSTAL (3.579545MHz)			
*	A-6794-777-A	QP-1 BOARD, COMPLETE ********** (Ref. No. 1,000 Series)			
		< CAPACITOR >			
C998	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C999	1-124-589-11	ELECT	47uF	20%	16V
		< CONNECTOR >			
CN999	1-794-401-11	PIN, CONNECTOR (PC BOARD) 6P			
		< IC >			
IC999	8-759-673-33	IC MSM9831-114MAZ060			
		< JUMPER RESISTOR >			
JR998	1-216-296-00	METAL CHIP	0	5%	1/8W
JR999	1-216-296-00	METAL CHIP	0	5%	1/8W

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R998	1-216-121-91	RES-CHIP	1M	5%	1/10W
R999	1-216-049-00	METAL CHIP	1K	5%	1/10W
		< VIBRATOR >			
X999	1-577-358-21	VIBRATOR, CERAMIC (4MHz)			
		MISCELLANEOUS **********			
8	1-791-857-11	CABLE, FLAT (FFM-34)			
⚠9	1-777-852-12	CORD, POWER (Mexican)			
⚠9	1-790-293-21	CORD, POWER (US, Canadian)			
704	1-500-144-11	HEAD, FE			
721	A-6759-620-A	HEAD BLOCK ASSY, ACE (TDK)			
768	8-839-049-53	DRUM ASSY DZH-0A2A/Z-RP			
M902	1-698-971-11	MOTOR, DC (CAPSTAN)			
M903	X-3947-577-1	MOTOR ASSY, CAM			
		********** HARDWARE LIST **********			
#1	7-685-648-79	SCREW +BVTP 3X12 TYPE2			
#2	7-682-147-01	SCREW +P 3X6			
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3			
#4	7-685-133-19	SCREW (DIA. 2.6) (IT3B)			
		ACCESSORIES & PACKING MATERIALS **********			
	1-575-334-11	CORD (WITH CONNECTOR) (1.5m)			
	3-062-072-11	MANUAL, INSTRUCTION (ENGLISH) (US, Canadian)			
	3-062-072-21	MANUAL, INSTRUCTION (FRENCH) (US, Canadian)			
	3-062-072-31	MANUAL, INSTRUCTION (SPANISH) (Mexican)			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Sony Corporation
Network Entertainment Group

9-921-761-11

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